# The Iron A

# A Review of the Hardware, Iron and Metal Trades.

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#### Thirty-Ton Steam Hammer.

The demand for forgings of large dimensions for guns, shafts and machinery has been steadily growing in the last decade, aided by the advantages which the use of steel offers for such purposes. In conformity with these demands the size of the tool for hammering forgings of such weight and size has been increasing, until at present a limit seems to have been reached in the power of seems to have been reached in the power of the railways to transport the products made by the construction of the great 80-ton steam hammer at Creusot. Foremost among the engineering firms who have built large steam hammers are Messrs. Thwaites & Carbutt, of Bradford, England, who have constructed the 25-ton hammer for the Alex-androwski Steel Works, near St. Peters-burg Russia, and one in use at the works of burg, Russia, and one in use at the works of Sir William Armstrong & Co. at Elswick, the drawings of which are here reproduced from Engineering.
The main standards, it will be seen, are

cast of two parts each, firmly bolted to-gether; they are circular in section, taper slightly, and are inclined toward one another. They are 25 feet high, and as they have a clear span at the floor line of 19 feet To inches, there is ample space for the ma-nipulation of the forgings. The guides, which are cast separately, are attached to the standards in a firm, unyielding man-ner. The entablature on which the cylinder rests at the same time con-nects the two standards to which it nects the two standards to which it is bolted and wedged. By this arangement and subdivision into several parts too pon-derous castings are avoided, while at the same time the rigidity of the structure, which must be great in view of the vio-lence and frequency of shocks, is not im-paired. The steam cylinder, permitting a 12-foot stroke, is 4 feet in diameter; it is placed upon the entablature, making the placed upon the entablature, making the entire hight of the hammer 42 feet and 9 inches. The piston-rod is very massive and strong; it is firmly keyed to the 30-ton tup, which glides in slots of the guides by means of a projection. An attendant on the platform operates the valves through the agency of rods and levers within his reach. The hammer is, according to Prof. S. Jordan, served by two 20 and two 40 ton cranes, each of which is furnished with three hydraulic motions according to Armstrong's system. The heating is done in four Siesystem. The heating is done in four Sie-mens gas furnaces. The Elswick hammer deserves careful study as a piece of work well proportioned and well executed. The frame, while it is strong and possesses the advantage of affording smple space, is built up of a reasonable amount of metal. The piston rod may appear excessively heavy while the tup is proportionately light; this however is a distribution of material which has many claims to consideration.

#### American Coal in Italy.

Mr. Spencer, our Consul at Genoa, in a letter to Mr. Hunter, says:

letter to Mr. Hunter, says:

During the past quarter two cargoes of anthracite coal have been shipped to this port by a Philadelphia Company, with a view of opening up a market for American coals, and the experiment, which at one time seemed likely to prove a failure, has been attended with the most gratifying success. When this coal was first placed upon the market the highest price bid for it was only 22 francs per ton, an amount insufficient to cover the freight from New York. Subsequently, however, on its becoming known that it was well adapted to smelting purposes, the price at once advanced smelting purposes, the price at once advanced to 40 francs per ton, which covers original cost and freight and leaves a fair margin

Heretofore English coke, which is selling at 60 francs per ton, has been used almost exclusively by Italian iron founders, but as the American anthracite, after repeated experiments, gives equal, if not superior, results, there seems to be no reason why it should not supersede its English rival in the Italian market. It appears from reliable information that the amount of English coke consumed in the Mediterranean basin coke consumed in the Mediterranean basin is over 200,000 tons annually, to say nothing of other European ports. For this trade the American anthracite bids fair to become a successful competitor, thereby furnishing a much-coveted outlet for the surplus production of our immense coal fields, and at the same time giving employment to hundreds of vessels in our languishing representations. of vessels in our languishing mercantile

marine. Col. John W. Forney writes on the same subject from France as follows: In a long and interesting conversation with my old friend O. M. Spencer, Esq., for twelve years American Consul at Genoa, I find that considerable excitement has been produced in Italy by the arrival of this new article of fuel. Mr. Spencer is in high spirits that our Pennsylvania anthracite will find a great sale, with proper effort, all over the Conti-nent for smelting purposes. The English soft coal holds the market at about 60 francs a ton, while about 40 francs will pay for our anthracite, including the costs of transportation to Genoa. Most of the iron introduced into Italy is from England and Wales, and the late trials at Genoa of our Pennsylvania the late trials at Genoa of our Pennsylvania anthracite have produced a better iron for all the purposes in which iron is used in Italy. I need not theorize on a subject so familiar to the ironmasters of Pennsylvania as the superiority of anthracite in the manufacture of the best iron. That with in the manufacture of the best iron. That with in the manufacture of the best iron.

most important to the owners of our collections, to miners and to shippers, is the fact that all the Continental nations can procure our anthracite as cheap as and cheaper than the English bitumens, and that the anthracite is better for smelting purposes. The onterprise of Torrence & Co. deserves special commendation. The bark Avanell is a New York vessel, but the trade of which it is the pioneer can be cheaper done in Philadelphia shipstrading directly to the Continental ports, and may in the end, and sooner than we expect, lead to the formation of special lines from our city, as more than once advocated by Italian visitors to the United States, and steadily by our American officials abroad.

"the balance of trade" will need no tariff to adjust it. Your experiment in opening a new commerce with Brazil and the recent in opening a new commerce with Brazil and the recent The family of a laboring man, consisting of himself, wife and three children, can live very comfortably on \$214 per annum; there is not so much in high tariffs, as we contend, or in free trade, as the English insist, but in finding new places in which to sell our surplus materials—or in the exchange of the spineser can be cheaper done in Philadelphia works of nations, by such a policy as that started by a Philadelphia house, and at present a topic of much conversation among and there children, can live very comfortably on \$214 per annum; there is not so much in high tariffs, as we contend, or in free trade, as the English insist, but in finding new places in which to sell our surplus materials—or in the exchange of the substantial relief from hard times day without board.

The family of a laboring man, consisting of himself, wife and three children, can live very comfortably on \$214 per annum; there is not so much in high tariffs, as we contend, or in free trade, as the English insist, but in finding new places in which to sell our surplus wery comfortably on \$214 per annum; there is not so much in high tariffs, as we contend, or in free trade, a

Some time ago the Bangor (Mich.) Furnace Company issued checks or orders of the fol-

lowing tenor:

"The Bangor Furnace Company will pay the bearer on demand 50 cents in goods at their store in Bangor, Mich."

Somebody prosecuted them for issuing these promises, alleging that it was in violation of the law; but the U. S. Supreme Court decided that "the instrument not being payable in lawful money, the issue and circulation thereof were not in violation of the act in question."

A similar case has just been put upon the

the act in question."

A similar case has just been put upon the docket of the United States Circuit Court, and this is also "out West." The Cairo and St. Louis Railroad Company have been in the habit of issuing 25-cent checks, four on a slip, to be used as meal tickets by the employees when they were on the road, the hotel or boarding-house keeper accepting the checks as money and afterward getting them cashed by the company. The United States District Attorney claims to be able to prove that the company circulated the 25-States District Attorney claims to be able to prove that the company circulated the 25-cent checks as actual money; that the employees were paid off, sometimes partly and sometimes wholly, in them, and that a number of storekeepers and pawnbrokers took them at a considerable discount. The front of each ticket stated that it "is good for 25 cents, payable at the time and when all conditions written upon the back are complied with." The conditions on the back referred to were: "This ticket is only to be used by an employee of this company for meals and to were: "This ticket is only to be used by an employee of this company for meals and lodgings, and the person receiving it does so with the understanding that the company will refuse payment if used for any other purpose, and will only make payment when presented therefor at the office of the company at St. Louis, Mo., when the rolls of the company are being, paid for the month.

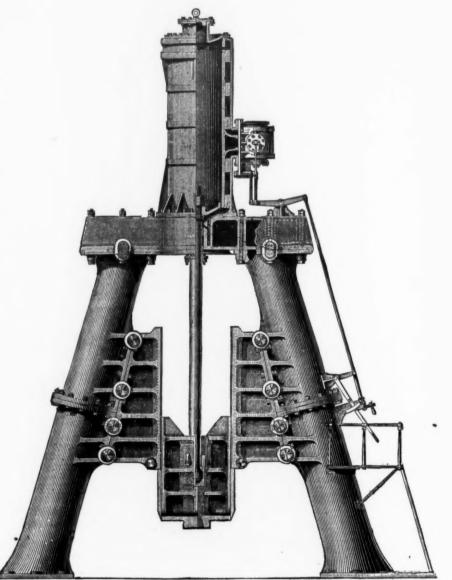
company are being paid for the month named above."

Though somewhat similar to the Bangor case to which we have referred, Judge Treat refused to quash the indictment and ordered the case tried. It has not yet been

American Enterprise in Chili.—The El Mercurio del Vapor, under date Valparaiso, May I, issues an eight-column article, the substance of which is that the La Seguia Gold Mining Company, organized under the laws of the State of New York, has built a constitution of the state of New York, has built a constitution of the state of New York, has built as aws of the State of New York, has built a canal 12 miles in length, and is building a reservoir 800 feet broad and 75 feet high, which, when completed, will afford an ample supply of water to wash the gold-bearing gravel by the hydraulic machinery—such as is used in California, and which is the first to be employed in South America. The complete to be employed in South America. The supply of water in the canal now employed is sufor water in the canal now employed is sufficient during the rainy season, and when the reservoir is completed the hydraulic machinery will be constantly in operation day and night. Five hundred men are now employed in building the reservoir. The most competent engineers declare that \$1,-000,000 can be realized yearly, and the six hills, being the deposits of an ancient river, cannot be washed away in a hundred years. This mine has been worked for a hundred years or more by the natives in their crude way, but a thousand could not obtain as much in a year as can be realized in ten days by the hydraulic system. Mr. John Simpson is the mining engineer from San Francisco, Dr. A. P. Burns, of Maryland, is general superintendent at the mine and Mr. John H. Flagler, of New York, is the president of the company. The latter is the man who put the iron pipes over the Nevada Mountains for Flood & O'Brien which supply the water for the Bonanza mines.

The Railway World says in a recent article on bridges that the iron for such structures needs especial care and judgment from the time the ore is selected at the mine until it passes through the last roll at the mill. Before the iron is used, its tensile and com-pressive strength should be well known, and the cold bend test applied. In a Howe truss bridge of 107 feet span, built seven years ago, one of the truss rods had dropped on the same conditions. At the last state-ment the Reichs Bank had \$19,000,000, the bank of Hanover \$750,000 and the bank of Brunswick \$380,000 of notes uncovered by coin in circulation. Paper money is equal in value to coin, since it is at all times redeemable in coin. equal in value to coin, since it is at all times redeemable in coin.

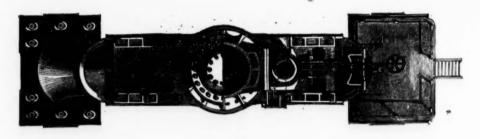
Trade in general is very dull all over Germany, and in this consular district especially. Work, however, of many kinds is readily to be obtained; the great trouble excellent cold bend test. On the same road, without board.
Ordinary laborers, including farm and field hands, receive from 35 ceuts to 59 cents per day, without board. In the country the custom is to pay more in land products than in cash, similar to the American "constant" of the State of things. The rapid increase of the German industry since 1866, and more long those only who are employed by the day.
Railway hands, laborers on public works rearrightants, and the same tensite state of the German industry since 1866, and more especially in 1871 and 1872, had a most extraordinary influence on wages. This, country the great trouble seems to be that workmen will not work at present prices or at such works as is to be had.
So far as I am able to learn the Social Democartic party is largely responsible for the state of things. The rapid increase of the German industry since 1866, and more especially in 1871 and 1872, had a most extraordinary influence on wages. This, country the country of the German industry since 1866, and more especially in 1871 and 1872, had a most extraordinary influence on wages. This, country the country of the German industry since 1866, and more especially in 1871 and 1872, had a most extraordinary influence on wages. This country is a country of the German industry since 1866, and more especially in 1871 and 1872, had a most extraordinary influence on wages.







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purposes, and can be placed on the Italian most substantial triumphs of the Philadel-wharves for 40 francs, you can anticipate the profit even in the midst of a vigorous combined. competition. In regard to the return cargoes, that point was settled long ago. The only difficulty was to secure cheap freights from the United States, or such American products as might be used here, in exchange for Italian marbles, pictures, sculptures, rags, &c., for which there is a constant demand in our country. You can study the value of American commerce to Italy as you traverse the Italian section. Our petroleum and sewing machines are for sale all over the Continent, and immensely in Italy, Germany, Switzerland, Spain and the further East, and alfarms, they must find speedy sale as our familiar to the ironmasters of Pennsylvania as the superiority of anthracite in the manufacture of the best iron. That which is

English coke is now selling at Genoa for | coal, now at the lowest point of depression | notes exceed the amount of coin by more 60 francs per ton, and as Pennsylvania an-thracite is decided to be better for smelting purposes, and can be placed on the Italian most substantial triumphs of the Philadel-

#### Wages and Currency in Brunswick, Germany.

Mr. W. C. Fox, our Consul at Brunswick Germany, writes as follows concerning the wages of workingmen in his district: Mechanics and skilled laborers of all kinds

receive from 48 cents to 76 cents per day, without board.

than the above-named sum the bank must pay a yearly tax of 5 per cent. on the sur-

The bank of Hanover can issue \$1,400,-000, the bank of Brunswick about \$750,000 on the same conditions. At the last state-

traordinary influence on wages. This, sile strength, averaging about 4 coupled with the success of the German of the section of a square inch.

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explode.
It affords a good margin to the dealer, and its merits make it the easiest stove to sell and the most satisfactory to the buyer.

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| Solver the very workmen of the very

The following information concerning vory, which we take from the Boston Commercial Bulletin, will be of interest to cut-

ry manufacturers and other consumers: In the strictest sense no substance except the task of the elephant presents the charac-teristics of true ivory, which, according to the best anatomists and physiologists, is re-stricted to that modification of dentine, or tooth-substance, which, in transverse sec-tions or fractures, shows lines of different colors, proceeding in the arc of a circle and forming, by their decussations, minute curvilinear, lozenge-shaped spaces, known as the "grain" of ivory. In ivory there is more mineral matter than in bone, but it has still a definite animal basis which retains its form when the calcareous matter has been removed by maceration in acid. It would be a most interesting task to trace the history of a tooth or tusk from its primitive embryonic dental capsule, through all its stages of formation and growth, until it arrived at the perfect tooth—the perfect tusk. Such a line of study would be well worthy of pursuit and would amply repay the time and

attention given to it.

Ivory is derived from the elephants of Africa and Asia, and also the mammoth remains on the northeast coast of Siberia. It is obtained from the hippopotamus, walrus, or moose, the boar of India and the whale. Large quantities of each kind of ivory are imported into this country, and of considerable value as an article of commerce. Dura ing the last thirty years the quantity of ivory brought into this country annually has been doubled, and, at the present time, such is the demand for ivory that the market value has also been doubled during that period. Africa is still, as it ever has been from the earliest times, the great source of from the earliest times, the great source of the supplies of ivory to the rest of the world. Although ivory is obtained from the Asiatic elephant kept in a tame state in Siam and Ceylon, yet, still, the great storehouse for it is Africa. All medium sized tusks of Zanzi-bar ivory are sought after and bought up for India, and hence it is that so great a proportion of the ivory brought from that coast to England and America is defective—in fact, we only get the rejected tusks. To those interested in the matter of billiard balls, it may be worth while to mention that for balls 2% or 2¾ inches in diameter the most solid and valuable samples of ivory are used. Other kinds of ivory are worth, on the average, £50 per cwt. That from which billiard balls are made is worth £70 to £80 per cwt. The need of their being made out of the best part of the tusk is accounted for in this way: a billiard ball should be without bias, i. e., no tendency to move in one direction more than another. It has been found that the center of the solid part of a tusk is more dense than the outer part, or skin, and hence the need of making the ball out of that part of the tusk where the skin, and hence the need of making the ball out of that part of the tusk where the density is equally spread, so that the ball, when made, may run freely every way. A very ingenious machine is used in making such balls; a block of ivory is dropped in at one part, the machine being at work, and the ball comes out at another part completely spherical. spherical.

The mode of collecting ivory on the Continent appears to have been the same from the carliest times of which there are any records. Evidence of this can be had from the sacred writings of the Jews in the Old Testament Scriptures; the accounts given by Herodotus, the oldest Greek historian, and the narratives of the most recent travelers in Africa—such as Baker, Cameron, Livingstone and Stanley. They all show that the trade in ivory was carried on for centuries before our era, much as it is at the present day. Pliny, in his natural history, states that in his time (70 A. D.) the natives made door-posts of the tusks, and even fences and stalls for their cattle, much as they do now; and the graves of their great men, or heroes, were then, as at present, ornamented with bristling rows of elephant tusks, very suggestive of a sea-anemone on a gigantic scale, any single tusk of which a gigantic scale, any single tusk of which might be worth from £50 to £70. Sometimes, when a tusk is found to be what is termed "beany," it could be seen that the point of it is, from frequent friction and rubbing, quite worn away and flat. This abnormal condition was also found in the pulp or contents of the hollow cavity, and then it assumed some very grotesque forms. It has been thought that the presence of a finally dropped out at the end of it. Silver and gold bullets have been found in tusks, which is evidence of their having been fired by "royal hands."

The presence of elephant remains in the

frigid zone is a most interesting subject of inquiry, and on which much has been said, but concerning which no entirely satisfactory conclusion has been arrived at. The form of the mammoth tusk is different to that of the existing elephant; the minute structure also differs in some respects. It has been found that when this kind of ivory is manufactured into knife handles, or piano forte keys, it looks well for a time, but at the end of two or three months the surface is covered over by a thin film of lime; and, instead of the fine, bright, appearance, the ivory assumes a dull, dead look.

Vegetable ivory is the hardened kernel of the nut of a species of palm, of which there are several kinds. The Brazilian palm (Phy-tel:phas Macrocarpus) grows freely in Central America and Peru, and yields what is known as the corosos nut of commerce. When shipped, the kernels are quite milky and soft, like white wax, and during the voyage they ripen and become hard. The nut is chiefly used for making buttons, studs and other small articles.

tiful material, must very early have attracted notice for the purposes of art. There are ivory productions of pre historic man in existence with figures and outlines engraved on them. We have lately heard man in existence with figures and outlines engraved on them. We have lately heard much that was of interest about our old friend, the "pre-historic man," and from the amount of attention he has received, he has come to be a very important personage in the world's history. He has left his marks, if not his name, on certain veritable marks, if not his name, on certain veritable pieces of ivory, the antiquity of which has been placed beyond doubt or cavil. One of these was incised or cut in the likeness of the mammoth, with which race of mammals our friend was coeval. This specimen might be regarded as the oldest work of art in ivory hitherto found without a date. The most ancient works, and those whose date or ago could be found were obtained from Econol. could be found, were obtained from Egypt, and they often took the form of tablets carved with figures and hieroglyphics from which could be ascertained the age and date of the work. There is one such tablet in the British Museum, and in the Louvre, Paris, is a small ivory box with the name on it of a is a small ivory box with the name on it of a dynasty anterior to the exodus of the Jews, so that it is not beyond the range of possibility that such a box might have been in the hands of Moses or Joseph. In Assyria and Ninoveh ivory was extensively used, and the researches of Layard, Bonomi and Smith brought many remarkable objects to light, which are now in England.

There were notices of works in ivory in all

There were notices of works in ivory in all ancient writings before the Christian era. The Hebrew scriptures frequently allude to such; so do the writings of Hesiod, Homer, Herodotus and others. The frequent allusions to ivory palaces, ivory thrones, ivory beds, pointed to a wide and extensive use of the material, not only for small articles, but for the construction and ornamentation of works on a large scale. Among the ancient Greeks, who carried the arts to the highest point of excellence, ivory was used in combina-tion with gold, commonly known as chryselephantine. Phidias, the great sculptor, was employed in making the famous statues of Minerva for the Parthenon at Athens, and of Jupiter for Olympia. The statue of Minerva was 40 feet high and that of Jupiter more than 50 feet. The faces and uncovered parts of those statues were made of large plates of ivory carefully joined. Some of the Greek chryselephantine statues remained intact until the 7th and 8th centuries, at which period the spirit of image-breaking set in, when they were irrecoverably destroyed. It is thought that the ancients had method of softening their ivory so as to be able to bend it into large flat plaques. But that method, like others the Greeks possessed, must now be enumerated among what Mr. Phillips has described as the "lost arts." Some of the old ivory carvings, originally heathen, have undergone a transforming operation, and, by the carver's skill, have been altered to Christian sentiments. In this way the figure of a goddess has been converted to a saint, and the effigy of a deified Roman emperor has been made into the figure of an apostle. There was one use of ivory among the early Christians not often alluded to. In

the early church it was customary at the end of public meeting to exchange the "kiss of peace." This practice was, however, found to be attended with some inconveni-ence, because the osculations were not always ence, because the osculations were not always devout—not always even platonic. So a flat piece of ivory was directed to be used for this purpose and handed round instead of the old practice of salutation. Whether the change from the warm cheek of youth and beauty to the coldness of an ivory slab was a change for the better might be very well left to the thoughts of those whom it concerned. Anyway, all further scandal cassed cerned. Anyway, all further scandal ceased, and that, we might suppose, was the inten-tion in the change introduced.

Ivory workers are necessarily very economical in using their material. Nothing of the article is wasted; small, clean pieces and shavings are reduced to a gelatinous state and form excellent size; the dust and discolored scraps are collected, to be converted into the valuable pigment known as ivory black, by the process of calcining in metal retorts.

The Art of Molding .- At a meeting of the King's College Engineering Society, Mr. E. W. Anderson read a paper on this subject. He gave the following general rules to guide the molder in the running-in of the metal in molding: t. Choose, if posthen it assumed some very grotesque forms. It has been thought that the presence of a bullet or some foreign substance fired into the tusk at its root has set up a condition which has resulted in the so-called "bean disease." Instances have been known where a shot entered the root of a tusk at its soft disease." Instances have been known where a shot entered the root of a tusk at its soft part in a young elephant and gradually traversed the whole length of the tusk and finally dropped out at the end of it. Silver and grid bullets have been found in tusks. choose a place in the mold so that the metal will have no tendency to wash any part away in its first rush. 6. (This rule may be called a continuation of No. 5). The metal should not be allowed to fall from any hight upon a weak part of the mold, or it will be liable to break down portions thereof.

The sale of German hardware is gaining ground in Great Britain. A Sheffield correspondent writes that he was shown, in the warehouse of a leading Sheffield merchant and manufacturer, samples of tailors' scissors which were quite equal to those made in Sheffield. This is an important brunch of the scissors trade, and was for many years monopolized by Sheffield makers. The difference in prices are astounding. The Shef-tield-made tailors' scissors cost 18/; the Ger-man article, similar in size and equal in quality, costs only 7/3. They look well, cut well, and, we are informed, wear well. Does this speak well for England's trade unions with their obnoxious restrictions? As the organ of the hardware trades, we regret that the backbone of England, viz., her workingmen, should be so stupid in their demands as to cause their employers to be other small articles.

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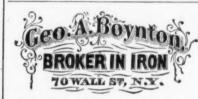
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ncentrated Borax in sacks, ected concentrated Borax in barrels, fined Borax in cases, liverized Borax in barrels, liverized Borax in barrels, iverized Borax in pound and half pound packages, ing Sole Agents for Messrs, Smith Brox, Owners of MINES, we are enabled to sell at the lowest prices, W.H. T. COLEMAN & CO., w. YORK, 50 Pearl Street.

Iron Making in Western New York.

The Buffalo Courier says: In 1861 the The Buffalo Courier says: In 1861 the old Pioneer blast furnace was erected by George Palmer in the eastern part of the city, on Buffalo Creek, and this was the starting point in the production of pig iron here. This stack is now one of the three blast furnaces owned by the Union Iron Company. In 1862 Mr. Charles Wadsworth built a rolling will always def the furnace. Company. In 1862 Mr. Charles Wadswords built a rolling mill alongside of the furnace for the purpose of converting the pig iron made there into wrought or bar iron. From made there into wrought or bar iron. From time to time various additions were made, until now the Union Iron Company, which owns the entire property, has one of the most extensive establishments in the United States for making pig iron, iron rails, beams, plates, and the various forms of angle and bar iron. In 1863 Pratt & Co. built the Fletcher furnace at North Buffalo, and since it began to run out p.g. iron in April, 1864, its glowing top has never ceased to serve as a well-known beacon light on the Niagara River, except during occasional

The Lily Furnace at Ironton, although about 10 miles from the city down the Niagara River, should be included in the district, as it is owned in this city and is the only furnace outside of Buffalo which makes Superior ores. This furnace was completed in the fall of 1873 and ran about one year, after which it was "blown out" and has given been idle. since been idle.

It is said to be the most elaborately fin-ished furnace in the world, all of its appoint ments being of the best mat rial and finish, and everything being constructed with a view to permanent durability. The stack is fox16, resting on iron column and cased in boiler iron. The engine house (which was described in one of the London papers as elegant enough for the residence of a gentleman having a large income) contains besides man having a large income) contains besides the usual pumps two immense blowing en-gines, each of which is about 40 feet in total hight, and has a stroke of seven feet, the steam cylinder being 54 inches in diam-eter and the air cylinder 96 inches. Each engine has two fly wheels, each 24 feet in diameter and 20 tons in weight.

diameter and 20 tons in weight.

Without going into any details of construction we would simply say that all the arrangements were made with a view to constructing two furnaces, and everything is in place for the second, except the stack itself. The works are most advantageously situated and arranged with a view to good and economical production, so that any assured revival in the iron trade will see the works completed and in full operation. It is works completed and in full operation. It is most unfortunate that out of the five blast furnaces mentioned but one (the Fletcher) is now running, but in this respect Buffalo is not far behind the iron trade generally, and if the same proportions were observed everywhere, the market would not be so completely broken down by the overproduccompletely broken down by the overproduc-tion which has carried prices below any pos-sible margin of profit, except in isolated cases. With the present low rail freights and the ruinous competition now going on in the Pennsylvania and Ohio iron districts, pig the Pennsylvania and Ohio iron districts, pig-iron can be laid down here for just about what it would cost to make it, the small margin not being enough to cover the risks of manufacture and the contingencies of trade. In ordinary times the five furnaces here would not produce enough to employ the local demand, so that it is evident that if iron can be made here sow with prices at the lowest point they have ever reached in the lowest point they have ever reached in this market, no very great advance in prices would be necessary to induce all the furnaces to blow in.

Cheap coke is the one thing needed to ren-

der iron-making profitable here now. Anthracite has always been used, and its combination at this point with the rich and pure ore of Lake Superior has given the iron made a very high reputation for foundry and mill purposes, but the high cost of fuel and the violent fluctuations in price have prevented our iron trade from expanding as it mill purposes, but the high cost of fuel and the violent fluctuations in price have prevented our iron trade from expanding as it has at other places. Give Buffalo a pure coke at prices somewhere near Pittsburgh rates, and it will produce first-class red-short or neutral iron at prices that cannot be beaten anywhere, taking into consideration the local market and the cheap freights offering for distribution in all directions. If some of the many coal companies now losing money by selling the product of their mines at cost, or below, would make for this market a clean, washed, hard coke it would have a large sale, and would be in great demand for furnace and foundry use, providing, of course, that it could be sold at a moderate price. The blast furnaces alone could take at least 25 car loads a day. We have reached a pretty low range of prices could take at least 25 car loads a day. We have reached a pretty low range of prices for bituminous coals, perhaps as low as we can expect to get with the present modes of transportation, but coke is still expensive because it has to be carried so far by rail, although it might be made much nearer home. It is not likely that aither arthragits. because it has to be carried so far by rail, although it might be made much nearer home. It is not likely that either anthracite or ores will ever be much cheaper than at present, so that a reduction in the existing cost of production must come from using other fuel. In regard to its ore supply Buffalo is peculiarly favorably situated. Lake Superior ore can be delivered directly to the furnaces almost as cheaply as it can be the road and set up a holy picture to stop.

the works. It is a great loss to the city as the works. It is a great loss to the city as well as to the owners, to have all the furnaces and the rolling mills of the Union Iron Company idle. When in full blast these works give employment to over 1000 men; to them the shutting down last year was a serious matter, and the resumption of work will be a subject for general rejoicing. Pratt & Co.'s mill still keeps in active operation, as usual. as usual.

#### Utilizing Niagara.

serve as a well-known beacon light on the Niagara River, except during occasional short intervals for necessary repairs. Pratt & Co.'s rolling mill was built over 20 years ago, and it has frequently been enlarged and improved.

been pand in, and place been begun.

The principal part of the machinery will be near the water's edge, below the falls near that delightful spot called the Bridal Veil. The result air receptacles. ately above. The great air receptacles, three of which will be 70 feet long by 6 feet in diameter, will be below the bank, near the water, while the receiving reservoirs will be on the bank. The cylinders will be constructed of boiler iron in the most substantial manner. The preproductor for rom the feeding basin above to the air receptacles below is 214 feet. The engineer's figures show that 200,000 pounds of iron will be required, and it is estimated that power enough will be generated to raise about 350,-000 gallons of water 150 feet every minute. These results have been obtained by careful scientific tests, so that there is little doubt but they are nearly correct.

scientific tests, so that there is little doubt but they are nearly correct.

Gentlemen prominently connected with this enterprise own Day's Canal, which, it will be remembered, was constructed several purposes, at an expense of nearly \$1,000,000.

This canal will play an important part in connection with the new project. It is 33 feet wide by 11 feet deep, and leads from a point just above the rapids a mile across to the back below. At its lower end is a large basin 70 feet wide and 800 feet long and 11 feet in depth. From the basin a flume 300 feet long is digging to the edge of the precipice. At the mouth of the flume will be a massive iron gate with an 8-foot opening. The water from the flume will pass into the reservoir, which will be connected with the air receptacles below by means of large pipes syphon-shaped. Attached to the cylinders will be a requisite number of large automatic valves, to let the water run out of the cylinders after the compressed air has been allowed to escape. valves, to let the water run out of the cylinders after the compressed air has been allowed to escape. The practical working of the machinery will be briefly as follows: After the water in the reservoir on the top of the bank is high enough to reach the bend of the syphon it will escape down the pipe to the air cylinders below. The pressure thus obtained very soon closes the automatic valves. There being no escape for the water. thus obtained very soon closes the automatic valves. There being no escape for the water which continues to pour into the cylinder (each has its own feeder), the air which it contains is compressed by the volume of water from above, until it has as much expansive power when released as steam. The contains of the value of the val capacity of the reservoir and of the cylinders is so arranged that the reservoir will be exhausted by the time the desired compression has been obtained below. While the reservoir is again filling with water that in the cylinder is capacity and the control of the cylinder is the cylinder in the cylinder in the cylinder is control of the cylinder in the cylinder in the cylinder in the cylinder is cylinder in the in the cylinder is escaping, so that when the bend in the syphon is reached the contents of the cylinder is exhausted, and it is ready for another charge. Thus the operation is re-peated at regular intervals in each cylinder, and there being several of them, a continuous charge of highly compressed air is secured.

When the Nicholas Railway was built, in 1848, from St. Petersburg to Moscow, the furnaces almost as cheaply as it can be placed on the docks at Cleveland, the great distributing point for that ore. No 1 ores can be laid down here now for \$6, and other grades in proportion. This is less than half must be a man behind it, and so came to a can be laid down here now for \$6, and other grades in proportion. This is less than half the price in 1873. The rich magnetic ores of Lake Champiain can be delivered here by canal at a very low price, and across the line in Canada are immense beds of rich, pure ores which can be delivered for \$4 a ton. For mixtures mill cinder and New York State ores are cheap and abundant. Good limestone for flux costs about \$1.25 a ton. At these rates it costs to make a ton of the best iron between \$17 and \$18. As more than one-third of this is for fuel, that affords the best chance for possible reductions. affords the best chance for possible reduction. From present indications it is not probable that any of the furnaces now idle

The engine results as the master of ceremonies told the engineer: "Put on all steam and goahead without regard to consequences."

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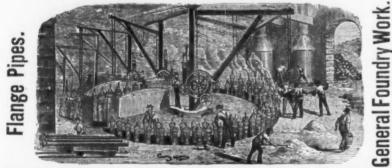
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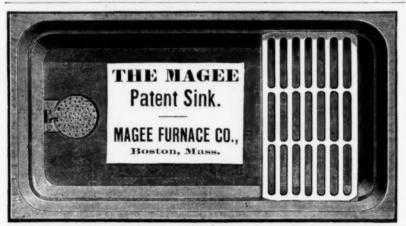
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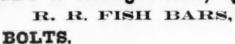
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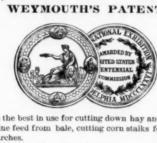
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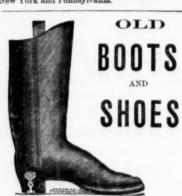
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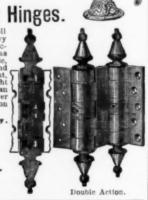
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Mr. Joshua Rose, M. E., well known to

of the cracking and splitting of steel during the hardening process. Not only is the article or piece lost after having incurred the cost of its manufacture, but in many cases the completion of the machine of which it forms a part is arrested until the lost piece is replaced. In many cases this is done at increased expense, because the piece has to be made singly instead of with a number of others, involving as much setting of ma-chine and adjustment of tools as would be required for a large number of pieces. Suc-cessful hardening and tempering is indeed, even under ordinary and unvarying condi-tions, considered and kept as a trade secret. Visitors are excluded from the hardening visitors are excluded from the hardening and tempering room. In some cases the method of heating, in other cases the material used for heating, in yet others the cooling mixtures form the supposed secret. As a matter of fact, however, some of the very best tool manufacturers employ the simple open fire or furnace and water, and it is probable that with these two simple agents good cast steel can be as successfully and properly hardened for any purpose as it. agencs good case steer can be as successfully and properly hardened for any purpose as it can be under any other process, and the ad-vantage gained by heating in fluxes consists in increased expedition and the necessity for a less expert manipulation.

The splitting or cracking of steel occurs during the cooling part of the hardening produring the cooling part of the hardening pro-cess, and is to be easily avoided even with the most unfavorable of steels if the condi-tions of cooling are made to conform to the form and size of the article. The cooling is, in a large majority of cases, performed by dipping the heated steel in water; and the manner in which the dipping is performed may be made at will to crack, warp, or straighten the article. straighten the article.

The instant the surface of a piece of red-hot steel enters the water a rapid contrachot steel enters the water a rapid contraction of the submerged portion takes place, and unless this contraction is kept equalized to suit the shape of the article the side or part most contracted will bend hollow, causing the diametrically opposite metal to bend to accommodate the inner curve. Suppose, for example, we heat a piece of steel, I inch square and 12 inches long, to a red heat and dip it slowly in water so that one side of the square will strike the surface flat and evenly; then that surface will contract while the diametrically opposite or upper while the diametrically opposite or upper surface will remain expanded; the lower face will curve to a concave, the upper one to a convex. If, then, such a bar were curved during the heating process, we may help to straighten it by dipping it slowly in the water with its convex side downward. If it was bent at one end only, we may dip it at that end first diagonally and with the convex side downward. If, however, we dip it with its length lying either diagonally or horizontally, we are apt to warp it, no matter how quickly it may be dipped, and the reason is, in addition to the above as the reason is, in addition to the above, as the reason is, in addition to the above, as follows: Experiments have demonstrated that the greater part of the hardness of steel depends upon the quickness with which its temperature is reduced from about 500° to a few degrees below 500°, and metal heated to 500° must be surrounded by a temperature which renders the existence of water under atmospheric pressure imposwater under atmospheric pressure impossible; hence, so long as this temperature exists, the steel cannot be in contact with the water, or, in other words, the heat from the steel vaporizes the immediately surround-

ing water. The vapor thus formed penetrates the surrounding water and is condensed, and from rounding water and is condensed, and from this action there is, surrounding the steel, a film of vapor separating the water from the steel, which continues so long as the heat from the steel is sufficiently great to main-tain that film against the pressure of the water and the power of the water which rushes toward the steel to fill the spaces left vacant by the condensation of the vapor as it meets a cooler temperature and condenses it meets a cooler temperature and condenses.
The thickness of the vapor film depends mainly upon the temperature of the steel.
But here another consideration claims attention. As the heated steel enters the water, the underneath side is constantly meeting water at its normal temperature, while the upper side is surrounded by water that the

unction of the hardened with the soft metal the liner sides of the two sections that is abrupt, the hardened end is apt to break short off. The method of dipping, therefore, is, in this case, to plunge the end of the steel vertically into the water, to a depth while running. The ear will cost about \$4000.

Behavior of Steel During Hardening. a little more than equal to the depth it re quires hardening, and, after holding it still there until it is black hot (that is, as soon as its

Mr. Joshua Rose, M. E., well known to our readers as a writer upon engineering and mechanical topics, contributes the following article to the *Polytechnic Review* upon the cooling of steel and its behavior during the process of hardening:

One of the most serious losses common toour tool and implement manufactories is that of the cracking and splitting of steel during the hardening process. Not only is the heat in the contiguous metal to raise the temperature of the hardened part enough to temper it. This plan is always followed in the tempering of lathe and planer tools, flat drills, &c. If, however, the method of dip-ping is to hold the steel in the water at an even depth after the immersion, the temper-color will be very narrow, while, if the steel is raised and lowered in the water, the color-

> Recent Armor Plate Tests.—The Sheffield Independent gives an account of the most recent armor plate tests, which were more successful than any of the preceding. In continuation of the Admiralty experiments with armor plates, a composite plate manufactured by Messrs. Cammell & Co., of the Cyclops Works, Sheffield, was subjected to gunnery tests on May 30, on board the target ship Nettie, in Portsmouth harbor. The plate tested was \$ feet long by 6 feet \$\frac{34}{2}\$ inches in width, and 9 inches thick, its weight being slightly over \$ tons. It was composed of \$\frac{37}{2}\$ inches of steel and \$\frac{57}{2}\$ of iron. The gun used was a \$12\$ ton 9 inch muzzle loading rifle, and the charges were 6olbs. of battering pebble powder; the projectiles were chilled Palliser shots \$25lbs. in weight, the muzzle velocity being \$1420 feet per second, and the energy at the muzzle 3486 feet. Three rounds are usually fired at a plate, and hitherto that number has done, irretrievable damage, but the plate fired at was so comparatively inval-Recent Armor Plate Tests.-The Shefhas done irretrievable damage, but the plate fired at was so comparatively invul-nerable as to lead to two extra shots being nerable as to lead to two extra shots being fired to ascertain whether it was possible to break it up. The impact of the first three shots formed a triangular diagram, being about 2 feet apart. The first projectile struck the plate on the right-hand side, and penetrated nearly 7 inches, occasioning a series of superficial cracks. The impact of the next shot was the lower section of the plate, the penetration being a trifle more plate, the penetration being a trifle more than 7 inches, and the further injury a fis-sure, graduating to the bottom of the plate, going right home to the backing. The third shot made a number of cracks, rather insignificant in their character, and pene-trated 6½ inches. This depth of penetra-tion needs to be explained, for to those untoo needs to be explained, for to those unacquainted with the previous experiments the idea may be conveyed that this test was rather a failure. At 10 yards distance, with so powerful a gun as a 12-ton g-inch rifle, a shot penetrates clean through an iron plate and partly through the backing, and in a lesser degree the same result has at-tended the experiments with composite tended the experiments with composite plates, excepting in the case of that manufactured by Sir J. Whitworth, which was an extraordinarily expensive one, being studded with intensely hardened steel plugs. The fourth shot was aimed at the center of the triangular diagram, and practically broke the plate in two; the width of the fissure being three-eighths of an inch. Neither part, however, came away from the back. part, however, came away from the backing. The fifth projectile struck the right-hand low corner of the target, and carried away the section bodily. All five shots were smashed to fragments by the concussion, only their heads being embedded in the plate.

The Use of Emery Wheels .- In an English lecture on emery wheels the following paragraph is found: "A common delusion prevails that an emery wheel is a tool requiring neither skill nor practice, and it is left to any one who chooses to work it. The result of this same system, as applied to grind-stones, has caused that article to assume the simply disgraceful appearance it often exhibits—untrue, worn into grooves and hollows, no one responsible for keeping it right, and the result utterly wrong. This system pursued with emery wheels is simply fatal to their chance of success. Mount an emery wheel on a suitable machine on a rigid foundation (do not put a heavy wheel on a light spindle); run it at a proper speed, checking the calculation with a speed counter; keep it absolutely true with the diamond (a tool not half used), press the work lightly on to the wheel—'crowding the work,' as it is called, heating more and doing less than gentle, pressure; upper side is surrounded by water that the steel has passed by and, to a certain extent, raised the temperature of. Hence the vapor on the underneath side is the thinnest, because it is attacked with colder water and with greater force because of the motion of the steel in dipping. Suppose, now, we were to plunge a piece of heated steel into water and then slowly move it laterally, the side meeting the water would become the hardest and would be apt to become concave in its length.

From these considerations we may perceive how important a matter the dipping is, especially when it is remembered that the expansion which accompanies the cooling (although the companies the cooling (although the companies) and the result of the unfortunate emery wheel."

There is building in Cleveland a car to run upon a one-rail track now in operation near

expansion which accompanies the heating is a slow process compared to the contraction which accompanies the cooling (although their amounts are of course precisely equal), and that while unequal expansion can only warp the article, unequal expansion can only warp the article, unequal contraction will, in a great many or, indeed, in most cases, cause it to crack or split.

After an article is dipped to the required depth, it should, if straightness is of importance, be held quite still until reduced to the temperature of the water, because, if taken out before so reduced in temperature, it is especially apt to crack; and it is better to have a deep tank of water, if the body of the metal is great, so that the steel may be dipped slowly downward and become cooled sufficiently rapidly to harden without any lateral movement, except it be after the steel has lost its reduess.

When a piece of steel requires to be hardened at one end only, the dipping must be performed with a view to make the graduation from the soft to the hard metal extend over a broad section of metal; for if the junction of the hardened with the soft metal is abrupt, the hardened end is apt to break short off. The method of dipping, there-



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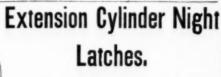
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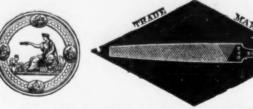
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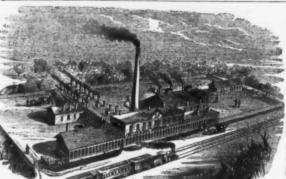


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#### Proof Strains for Chain Cables.

A Letter from Commander Beardslee,

To the Editor of The Iron Age: Throughout the United States, and probably throughout Europe, the custom obtains among manufacturers of chain cable to prove their cables before placing them upon the market, and in the United States it is quite common to read in the circulars of such manufacturers that their best cables are guaranteed as having withstood without in-jury the proof strains prescribed by the standard table of the British Admiralty.

Adopted thus as a suitable standard by which the value of American cables are which the value of American cables are measured, it is certainly of great importance that its requirements should be such as can be met by cables made of American chain iron and they undergo no risk of becoming seriously injured and weakened by its action. The object of this paper is to show:

1. That the table is the standard by which many of our best cables are judged.

2. That for reavens which will be assigned.

2. That, for reasons which will be assigned. the operation of the strains which are pre-scribed by this table do inflict serious injury upon cables made of American iron, in some ises to the extreme extent of destroying their value.

editions, so nearly that it is evident they are derived from the same source. This source is unknown to the writer; but there is in common use in most chain shops a "rule of thumb" by which the Admiralty proof strain for any size can be calculated, which is this: Ansonia Brass & Copper Co.

for any size can be calculated, which is this: Square the number of circular eighths of an inch in the diameter of the bar, multiply by 630 and the result is the proof strain.

Examples: 1-inch bar = 8 circular eighths,  $8^2 = 64 \times 630 = 40,320$ , proof for 1 inch; 2-inch bar, 16 circular eighths,  $16^2 = 256 \times 630 = 161.280$ , proof for 2 inch.

In the following table the strains given in column 2 are quoted from Lloyd's those in

olumn 2 are quoted from Lloyd's, those in olumn 1 are calculated by the above rule, and those in columns 3 and 4 are such as were furnished by the manufacturers: he low price, superior quality and fine sh of this Platform will be readily acknowl-ADMIRALTY STANDARD, AS OBTAINED FROM VARIOUS

W.D. MALZON		SOURC	FS		
Size of wire.	Calcula			Mfr.	Mfr. B.
Inches.	Pounds.	Tons.	Tons.	Tons.	
E	40,320	18	171/2	18	13
1 1-16	45.517	20.3	20	50	20
11/8	51,030	22.78	221/2	23	23
1 3-16	56,857	25.38	25	20	25
11/4	63,000	28.12	28	23	29
1 5-16	69,457	31.01	31	30	31
136	70,230	34.03	34	34	34
1 7-16	83,317	37.22	37	37	37
11/2	90,720	40.50	40	41	4 E
1 9-16	98,437	43-94	4.4	44	43
158	106,470	47.53	47	48	48
1 11-16	114,817	51.25	51	52	51
11/4	123,480	55.12	55	56	50
1 13-16	132,275	59.05	59	60	59
138	141,750	63.38	03	64	0.4
1 15-16	151,357	67.57	07	68	68
2	101,280	72	72	72	72
2 1-16	171,517	76.59	76		76
21/8	182,070	81.28	81	80	81.3
2 3-16	192,937	80.13	86	2.5	****
21/4	204.120	01.10	OX	88	01.1

It is probable that the occasional discrepancies found in the foregoing are due to differences in judgment when turning pounds into tons and fractions of tons and back again into pounds. There is nowhere a variation which would cause one table to be any less reliable and valuable than the other; but it is claimed that all based upon the same rule are constructed on erroneous principles, and that their use involves probable injury

to the cables proved by them.

The limit of stress which should be applied as proof to a finished product should not be so great that it exceeds the elastic limit and produces excessive and permanent distortion. All of the strains given in the table do thus greatly exceed this limit.

Again, there can be no reason assigned which will justify the subjection of the dif-ferent sizes to strains which greatly differ in their proportions to the actual strength of the links. The strains prescribed by this ta-ble are distributed thus unequally. The rule assumes that the strength of round iron bars varies directly with variation in the area of the bars. That this is not the case has been conclusively established by the results obtained by the United States Testing Board, in testing many bars of a great variety of

There is a variation in proportional strength found to accompany every change in diameter, except in such cases where through irregularities in heating the piles the natural effect of variation in production is counteracted. Such irregularities are liable to take place in spite of the utmost care, therefore the rate of variation in strength due to reduction alone is one which cannot due to reduction alone is one which can be established so exactly that it can be con-sidered as fixed; but it can be asserted safely that if no disturbing cause acts upon safely that if no disturbing cause acts upon safely that if no disturbing cause acts upon the bars every diminution in diameter will be accompanied by an increase of propor-tional strength, and that although irregular heating may cause an interruption to the rate of increase between sizes approximate to each other, yet that all counterbalancing causes will not be sufficient to reduce to an equality the proportionate strength of the bars of the extreme sizes of which cables are generally made, viz., the 2-inch and 1-inch round. Therefore as it will, and from the very nature of the processes of manufacture must, exist, this variation should be allowed for in all tables purporting to give the strength of productions from round iron bars of various sizes. Whether there are any tables extant in which this element is taken into consider-ation or not, it is very certain that in numerous important tables it is not, among which may be mentioned, in addition to the table under discussion, that of the British War Department, as given by John Anderson, L.L. D., for the testing of unstudded chains, and that of the United States government for the test of studded ones.

The result of the neglect of this variation, if its be given, and in the third column the government for the test of studded ones.
To make these points clear the table will first be given, and in the third column the as affecting the Admiralty test table, is that the cable made of 2-inch wire is, while being the differences of the additions to the

proved, strained in proportion to its probable

proved, strained in proportion to its probable strength over six per cent. of that strength to a greater extent, than is the 1-inch cable. This may be shown in this manner: Assume that two cables of the sizes mentioned are to be proved, both made from bars of the same iron with equal care, the only known cause for difference in strength being that due to the difference in size. If made of a due to the difference in size. If made of a fair quality of American chain iron, it is more than probable that the tenacity per more than probable that the tenacity per square inch of the smaller bar will exceed that of the other by at least 5000 pounds. If, then, the 1-inch bar is equal to 55,000 pounds, the 2-inch will be equal to but 50,000 pounds per square inch; the ultimate strength of the two bars will be 43,200 pounds and 157,000 pounds. If when made up into cables the links of both preserve a uniform percentage of the original strength of the bars, the original difference in proportional strength will also have been preserved. If strength will also have been preserved. If both develop in the form of cable, say, 165 per cent of the bars' strength (which is as high a percentage as can be expected), then the strength of the cables will be 71,275 pounds and 259,000 pounds respectively, of which strength the proof strain of the I inch (40,320 pounds) is 56.5 per cent, and that of the 2 inch (161,280 pounds) is 62.2 per cent. There is no reason why the large cable

their value.

The writer of this paper has received during correspondence with manufacturers of and dealers in cables a large number of letters and circulars, in many of which the claim is made that "all cables are tested by the Admiralty standard."

From two manufacturers copies of the tables used by them were received; these differ but slightly from each other, and nearly coincide with the "Admiralty Test Table for Studded Chains," as given in the American Lloyd's for 1875, and in previous editions, so nearly that it is evident they are in strength) than are the small ones.
And it is more than probable that when in service a much greater amount of life and property will depend upon the strength of the large than upon that of the and property will depend upon the strength of the large than upon that of the small chain. Were the percentage of the probable strength of the 2-inch cable reduced to an equality with that to which the 1 inch is subjected, the strain would be six tons less than that prescribed. And as the 56 per cent. would probably far exceed the elastic limit of the best and strongest of the many links of which the strongest of the many links of which the cable is composed, an addition to this strain would necessarily produce injurious effects far in excess of those which the same amount would cause if less preceded it. After the elastic limit has been reached and research the offect of even elicible additional to the same amount would cause if less preceded it. and passed the effect of even a slight addi-tion is very disproportionate to the amount. A single instance where the effect of un-A single instance where the effect of undue strain has been observed will demonstrate this point. While testing the Admiralty strains, a section of 2 inch cable 15 fathoms in length, made of most excellent iron, was measured at intervals; the first perceptible elongation took place at about 108,000 lbs., or about 48 tons; at 56 tons the cable had stretched 25 inches; an addition of 4 tons increased the stretch to 35 inches, and 8 tons more carried it to 56 inches; thus 12 tons added to the 56 tons more than doubled the stretch. At 68 tons it was considered to be unadvisable to further injure the cable in endeavoring to test the table of

sidered to be unadvisable to further injure the cable in endeavoring to test the table of Admiralty strains.

It seems probable that the high strains of the Admiralty table are based upon an assumed strength which does not exist in links male of American iron. Anderson states that cable bolts are "required to possess tenacity equal to 60,000 lbs. Anderson states that cable bolts are "required to possess tenacity equal to 60,000 lbs. per square inch." Our market does not furnish a great deal of such iron, and that which is equal to the above standard cannot be made or sold at a price which would bring it within the limits of "chain iron."

During the testing by the United States Board, six sections, ea.h five fathoms in length, of 1% inch and 1½ inch cable, were given the extreme test required by the

given the extreme test required by the table. After test the average elongation of the 1% inch was 14 inches, of the 11/2 inch, 18 inches; the chains passed the ordinary inspection in the shop and no links nary inspection in the shop and no links were pronounced injured; but upon removing them to the sunlight and carefully inspecting again by the aid of a magnifying glass, 14 out of the 387 links were found to be cracked. Had these cables been issued for service, it is more than probable that some heavy, sudden strain would have brought the defects plainly into notice. Even though the links should escape cracks. Even though the links should escape cracks, the disturbance to the atoms of the iron produced by the distortion would tend to render it more brittle and thus lower the power to resist sudden strains, although that of resisting steady strains might be The proof table used by the War Depart.

ment in England, as given by Anderson in his work on the "Strength of Material," published in 1872, is open to the same criticisms as have been made upon that of the Admiralty, it being based upon an assumed strength varying directly with the areas; but owing to the fact that it is intended for the test of unstudded chains (which both he and test of unstudded chains (which both he and Rankin hold to possess less strength than studded ones), the strains prescribed will not overprove the cables. They are as follows: For I inch, 12 tons; for 1½ inch, 15½ tons; for 1½ inch, 18½ tons; for 1½ inch, 22½ tons; for 1½ inch, 27 tons.

In this scale the multiplier constant 420 is substituted for the 630 used in producing the Admiralty table, which agrees with Anderson's (or Rankin's) expressed views, "that the unstudded cable is two-thirds as strong as the studded one of the same diameter of

as the studded one of the same diameter of wire. THE UNITED STATES GOVERNMENT PROOF TABLE,

The chain manufacturers of this country would run much less risk of injury to their products were they to adopt the proof strains by which government cables are proved. The strains prescribed for cables of all sizes are not greater than they can bear with safety. But even this table, free as it is from dan gerous faults, can be fairly criticised. It is constructed on erroneous principles, and the

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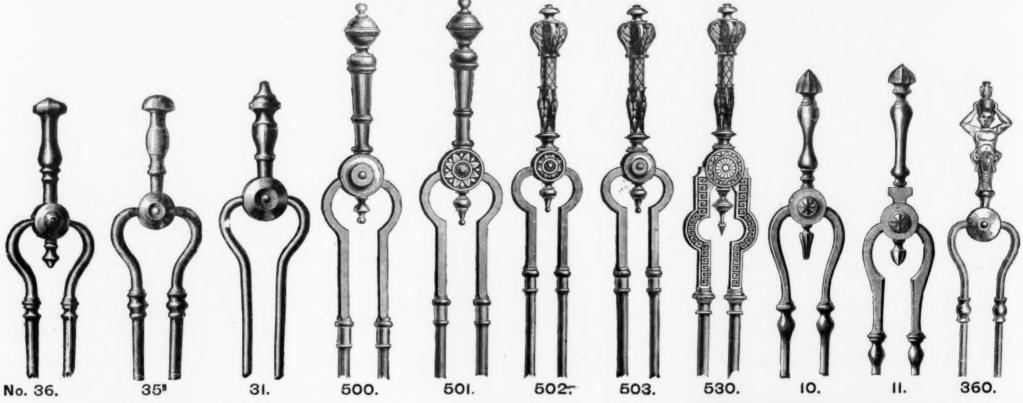
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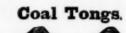
PHILADELPHIA. -

- No. 425 Market Street. WM. H. COLE, AGENT, - - 17 South Charles St.

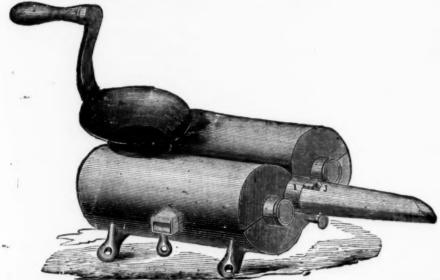
# POLISHED FIRE IRONS.



Hale's Patent Meat Cutter.



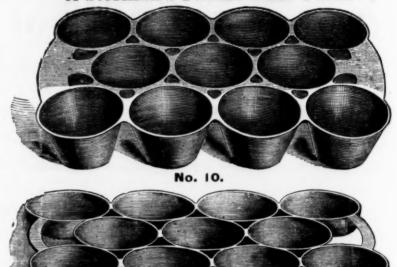
Waterman's Patent Bake Pans.



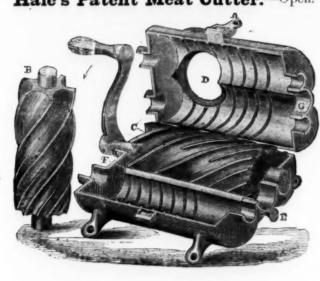
Hale's Patent Meat Cutter.—Open.



Butcher's Meat Cutter



No. 8.



No. 11.



No. 7.

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And of

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Agent for the Champion & Knox No. 99 Fluting Machines, EUREKA & PEERLESS WRINGERS. 100 Chambers St., New York.

strains prescribed for the proof of any one size, which gives the proof strain of the cable one-sixteenth inch greater in diam-

eter:	
Size. Proof Inch. Lbs.	r-r6 inch.
1 20,800	Lbs
11-16 30,600	3,800
13/8 34,600	4,000
1 3-16 40,800	
114 44,800	4,000
I 5-I6 50,400	5,600
13/4 56,000	
1 7-16 61,200	5,300
11/2 66,600	5,400
I 9-16 72,000	5,400
158 78,000	
I 11-16 83,200	5,200
134 87,800	
1 13-16 g1,800	
176	
1 15-16	
2	9,000

The irregularities in the differences cannot The irregularities in the differences cannot be explained by any theory based upon the strength of wrought iron. The strains are not too high, and this fact is probably due to the order of the Board of Navy Commissioners, Commodores Morris, Smith and others, who in 1820, in establishing a scale, gave orders that if, upon trial, any section of 15 fathoms was found to have stretched over 6 inches, the fact was to be reported.

As the principles upon which this table was constructed are unknown, it will be necessary, in endeavoping to prove that they

was constructed are unknown, it will be necessary, in endeavoring to prove that they are erroneous, to reason somewhat by analogy, and make use of the principles upon which the Admiralty table is based, in an attempt to find them; first by application of the rule by which the proof for each size is found by multiplying the square of the circular eighths by a number which with the Admiralty table is constant; then reversing the process, and dividing the proof strains of this table by the square of the eighths, we procure the following series of numbers, beginning at the I-inch size, viz.: 419, 423, 427, 452, 448, 457, 462½, 463, 462½, 460¾, 27, 452, 448, 457,  $462\frac{1}{2}$ , 463,  $462\frac{1}{2}$ ,  $460\frac{3}{4}$ ,  $50\frac{1}{2}$ ,  $456\frac{1}{2}$ ,  $447\frac{1}{2}$ ,  $436\frac{1}{2}$  448, 452,  $459\frac{1}{2}$ . Throwing out the occasional irregularities

not to be accounted for, we see that in this table there is an allowance made for variation in strength accompanying variation in diameter which is not made in the Admi-ralty table. Between the multipliers for the I and 2 inch size there is an increase of 40½ pounds by somewhat irregular steps. But this allowance is made in the wrong direction; instead of increasing with increase of diameter it should decrease.

This can be best shown by a few figures, based upon the Admiralty table, in which the multiplier is constant. Selecting the 1 and 2 inch sizes we have, multiplying by 630 each square of the number of circular eighths and dividing results by areas:

 $64 \times 630 = 40,320, \frac{40,320}{.7854} = 51,331 \text{ lbs.}$ 

and  $256 \times 630 = 161,280, \frac{161,280}{.3142} = 51,331,$ 

the final results being the strength per square nch in pounds.

If instead of employing the constant multiplier 630 to obtain, as above, the strength for all sizes, we should, having used it for

for all sizes, we should, having used it for the I-inch size, increase it with each increase of diameter (as is done irregularly in the U. S. table) we should by so doing call for an increase of strength per square inch to accompany increase in diameter.

If for the 2 inch we use 640 instead of 630, the result would be that we called upon the 2-inch bar to be equal to 52,145 pounds per square inch, the I inch being nearly a thousand pounds less. In the U. S. table the multiplier for I inch is increased 40 pounds to produce the strain for 2 inch. pounds to produce the strain for 2 inch.
As rolled wrought iron does not increase

in its proportional strength in proportion to increase of area, it is evidently wrong to use, in forming a table which should be based

upon its strength, data calculated upon the theory that it does so increase.

Were not the strains of the government table all within the limits of the margin of safety, it would be better that no allowance for the variation should be made than to thus allow it the wrong way.

PROOF AND BREAKING STRAINS OF CHAIN CABLES,

as given in the "Engineers and Mechanics' Pocket Book." By Chas. Haswell. Edition

1875. This table has simply an erroneous title,

which should be instead:

"Strength of round bars of various sizes, based on an average tenacity of 55,000 lbs. per square inch, and column showing the half of each strength."

Its insertion under its present title is probably due to inadverte further consideration.

further consideration.

It naving thus been shown that all of the tables which are used in this country are incorrect, if such showing is accepted our chain manufacturers would find themselves without a standard. Recognizing this fact, the United States Board appointed to test iron, steel, &c., has thought it advisable to prepare from the data collected a new prooftable in the construction of which full contable, in the construction of which full consideration has been given to the strength and elastic limit, and to the variation in strength, due to variations in the reduction by the rolls.

And it is considered that by the adop-And it is considered that by the adoption of this table cables can be proved to such extent that the presence of defective links may be discovered, and not to such an extent that the very proof shall produce defects which may not be discovered in time.

L. A. BEARDSLEE, Com. U. S. N.

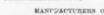
A correspondent writes thus to the St. Louis Journal of Commerce from North Carolina: On my way here I took in the celebrated Ore Knob. I had often heard of this noted copper mine, but was somewhat sur-prised at the magnitude of the work done here and to see a nice village. There are in operation six blast furnaces and one re-This department works 100 hands, and consumes 300 bushels of coal per day.

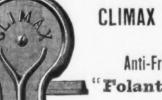
In a short time there will be four more furnaces in operation. This little village gives employment to a great many work-men. There are about 700 here in all— 400 on the hill and 300 in the forest pre-paring wood and coal. During the month of April there were made and shipped from this place 54 tons of copper. this place 54 tons of copper.

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The "Climax" is recognized as the Leading Hanger in the market. It is altogether superior to any other Barn Door Hanger ever made. In the "Climax" is a **complete wheel** provided with Anti-Friction Bearings. It is practical, hence its widespread popularity. It is the only Anti-Friction Hanger having a Wheel. The trade are cautioned against imitations, made to sell, and which are without any mechanical principles to recommend them.

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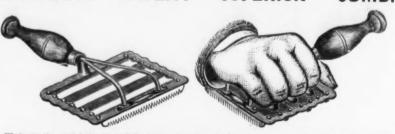
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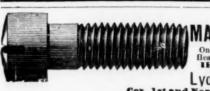
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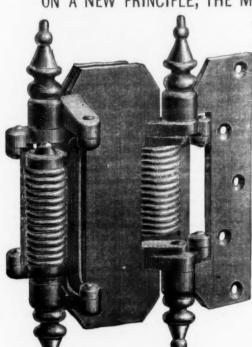
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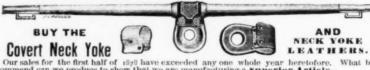
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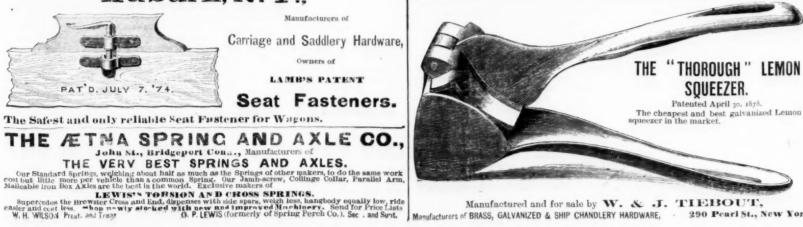
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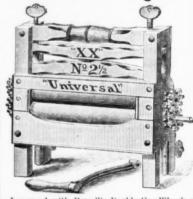
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Seventh Page.—Behavior of Steel During Hardening. Recent Armor Plate Tests. The Use of Emery Wheels. Ninth Page.-Proof Strains for Chain Cables

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cond Page.-Old Metals, Pape Stock, etc. Philadelphia. Pittsburgh. nooga, Boston. St. Louis. Cincinnati. Richmond, Twenty-third Page.-Louisville. Baltim Foreign. Our English Letter.

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Like.

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Forty-first Page -Boston and St. Louis

An important decision has just been rendered by the Supreme Court of Illinois in a case where the United States Mortgage Co. of New York was plaintiff, and turned on the point whether the Mortgage Company-a foreign corporation, organized under the laws of New York for the purpose of lending money-could lend money in Illinois and enforce its securities against

the purpose of acquiring land, but only for the purpose of lending money, the State statute of 1875 validating all such loans and giving to companies thus organized the same right of recovery that individual creditors possess, is retroactive in its operation, and covers all mortgages heretofore made by such

#### The Influence of a Tariff upon International Trade.

The Saturday Review in commenting on a paper on the growth of Great Britain's foreign trade since 1856, lately read before the Statistical Society by Mr. Newmarch, concludes its article with a suggestive paragraph which merits quotation: "What will surprise most persons is the very slight effect which hostile foreign tariffs have exerted upon our exports. Mr. Newmarch has prepared a table in which he classifies the several countries with which we trade according to the degree of hostility of their tariffs, and he exhibits the proportion borne by our exports to those countries to our imports from them. We find that in 'the period 1856-59 the proportion in the case of the most hostile averaged 64 per cent.; in 1875-77 it had fallen to 51 per This, then, was the greatest effect that can be attributed to the most hostile tariffs-to reduce the proportion of our exports to our imports barely 13 per cent But it may be questioned whether the effect is due to the hostile tariffs; for in the years 1870-74 there was no reduction in the proportion, but rather a slight increase. The falling off, therefore, is chiefly, if not entirely, due to the extreme depression under which those countries have been suffering since 1873. If so hostile tariffs merely prevent a growth of our exports. The fact has an important bearing on the policy of commercial treaties, besides disposing of the nonsense that is talked respecting the injury done us by protection abroad." After reading such a statement it naturally becomes interesting to verify it by an examination of statistics. We regret that we have not seen Mr. Newmarch's tables to which reference is made above, but our own foreign trade statis tics furnish abundant evidence that much of the familiar talk about the effect of our tariff upon our foreign trade is "nonsense of the worst kind. We invite attention to the following tables, compiled with great care from official data, showing the foreign trade of the United States since 1850:

IMPORT AND EXPORT TRADE OF THE UNITED STATES DUI ING THE FISCAL YEARS 1850 TO 1877 INCLUSIVE, MER-CHANDISE ONLY, SPECIE VALUES.

Fisc. Year	Import.	Foreign Export.	Net Import.		Tot. Trade in Mdse.
	173,509,526	9,475,493	164,034,033	134,900,233	298,934,266
1851	210,771,429	10,295,121	200,476,308	178,620,138	379,096,446
1852	207,440,398	12,053,084	195,387,314	154,931,147	350,318,461
1853	263,777,265	13,020,120	250,157,145	189,869,162	440,026,307
1854	297,623,039	21,631,260	275,991,779	213,985,236	489,977,015
1855	257,808,708	26,158,368	231,050,340	192,751,135	424,401,475
1850	310,432,310	14,781,372	295,650,938	266,438,051	562,088,989
1857	348,428,342	14,917,047	333,511.295	278,906,713	612,418,008
:858	263,338,654	20,660,241	242,678,413	251,351,033	494,029,446
1859	331,333,341	14,509,971	316,823,370	278,392,080	595,215,450
1860	353,616,119	17,333,634	336,282,485	310,242,423	652,524,908
1861	289,310,542	14,654,217	274,050,325	204,899,616	479,555,941
1862	189,356,677	11,020,477	178,330,200	179,644,024	357,974,224
1863	243,335,815	17,960,535		186,003,912	411,379,192
1864.	316,447,283	15,333,961	301,113,322	143,504,027	444,617,349
1865	238,745,530	29,089,055	209,656,525	136,940,248	346,596,773
1866	434,812,066	11,341,420	423,470,646	337,518,102	700,083,748
1807	395,763,100	14,719,332	381,043,768	277,641,893	658,685,661
1868	357-436,440	12,562,999	344,873,441	269,389,000	614,263,341
1869	417,506,379	10,951,000	406,555,379	275,166,697	681,722,076
1870	435,958,408	16,155,295	419,803,113	376,616,473	796,419,586
1871	520,223,684	14,421,270	505,802,414	428,398,908	934,201,322
1873	626,595,077	15,690,455	610,904,622	428,487,131	1,039,391,753
1873	642,136,210	17,446,483	624,689,727	505,033,439	1,129,723,166
1874	567,406,342	16,849,619	550,556,723	579,633,480	1,130,190,203
1875	533,005,436	14,158,611	513,846,825	514,880,624	1,033,727,449
1876	400,741,190	14,802,421	445,938,766	535,089,810	982,028,576
1877	451,323,126	12,804,906	438, 518, 130	602,722,022	1,041,240,152

Further statistics enable us to add to the foregoing table the following one, showing our foreign trade for the first half of the current fiscal year in specie values.

1877.	Import.	For'n Export	Net Import.	Dom. Export.	T'l Trade in Mdse.
July Aug Sept Oct Nov Dec	40,876,060 39,247,343 34,769,351 42,015,173 36,256,992 30,530,159	1,501,554	30,989,507 38,265,624 33,815,816 40,580,727 34,755,438 29,333,555	37,625,507 41,735,136 49,319,038 58,527,946 62,961,721 69,071,456	77,615,014 80,000,760 83,134,854 99,108,673 97,717,159 98,405,011
Totals.	223,715,078	6,974,411	216,740,667	319,240,804	535,981,471

Now, let us see what these figures mean From 1850 to 1860 our foreign trade showed an annual increase which, though not steady, maintained a fair average. The drop from \$489,977,015 in 1854, to \$424,401, 475 in 1855, resulted from the disturbances in Europe incident to the war of the Crimea, as the decline of \$28,779,905 in 1852, as compared with 1851, resulted from the agitation in Europe in consequence of the revolution The fluctuations in 1858 and 1859 resulted chiefly from the panic of 1857 in this country caused by overtrading, and followed by a natural shrinkage in values. Our war began in 1861, and was followed by the enactment of the tariff approved March 2, 1861. This was a war tariff intended to yield an immediate and large revenue, and with various amendments, alterations and modifications it has continued in force ever since. That it has been in the largest sense a protective tariff is shown by its effect in developing American industry during the memorable ten years from 1860 to 1870, and yet in spite of this "Chinese wall" our foreign trade has gone on increasing, not with regular advances from year to year, but with a gain of \$650,634,262, comconditions which restrict the consumptive capacity of the people. This is compensated and manufactures—an increase pronounced impossible by the free-trade theorists.

This comparison of annual totals will perhaps surprise some of our readers, but when

company was not primarily organized for that a protective tariff does not exert an mountable in the construction of a new unfavorable influence upon the foreign trade road. of a nation. By diversifying industry, increasing the earnings of labor, promoting the development of natural resources and able conclusions in regard to the usefulness appreciating values, it increases the prosperity of a nation, and while creating new and crowded streets they are invaluable wants provides the means of satisfying and answer perfectly the end for which they them. Had it not been for our tariff the are intended-taking the through traffic and ten years following the war would have been years of prostration and dark misfortune. Domestic industry would have struggled against hopeless odds, handicapped as it was by heavy taxation, and it is doubtful if we could have sustained our national credit or preserved our national integrity. The tariff has changed the character of our foreign the street is by no means an insignificant trade in some respects, but it has not stifled addition to the comfort of both man and it nor retarded its healthy and normal development.

The figures given above vindicate our remarks of last week with regard to the probable effect of the proposed Chilean tariff of manufactures dependent upon free trade with foreign markets, we should have small chance for success. On this subject the Saturday Review says: "Abstract reasoning has, curiously, little influence on a large part of the public. Nothing could be more complete than the theoretical argument in support of free trade, and it seemed to have been taught in this country, from the press and the platform, with a success which placed it beyond further questioning; but no sooner are we tried by four or five years of commercial depression than it is found that by large and owerful classes the lesson has never been intellectually mastered. Abroad opinion is yet more unfavorable. On the Continent of Europe protection reigns supreme. increased commercial intercourse have been proved by experience, the protecpurposes an inquiry instituted for political city the cost of the roads has been high for ends. In Germany also there are strong symptoms of backsliding; while in Austria, Hungary, Italy, Spain and Russia free trade cannot even obtain a hearing. In the United States, again, the opponents of outside competition hold their own; and in our colonies jealousy of the British manufacturer prevails over all other considerations. Of course this general rejection of our example and teaching reacts powerfully at home, so that even so distinguished a leader of the Anti-Corn Law League as Mr. Bright himself points to the exclusiveness of foreign tariffs as a serious "danger to our prosperity." Notwithstanding all this, the statistics of British foreign trade show that it has doubled in magnitude during the past twenty-two years, and that it has increased largely even with those countries which have the highest tariffs. The wisest economists are agreed that the depression of the last four years has been caused not by tariff legislation favorable to home industries, but by the destructive wars of the past and the burdening of hations with mountains of debt. Whether it is profitable for Great Britain to continue the policy of free trade is not for us to decide. Certain it is, however, that she stands practically alone, and suffers all the disadvantages of unrestricted foreign competition with none of the advantages of reciprocity. We need be in no hurry to put ourselves in the same position.

#### Elevated Railroads in Citles.

For some years past the city of New York has had an elevated railway in successful operation. Recently a new elevated road has been opened, and the first road has completed its double track from Central Park to the battery, which gives the city two "rapid transit" roads with double tracks. The experience gained in these important undertakings is likely to be of great value, not only in the future development of New York, but of all other large American cities. Through the stubbornness of the street rail roads will have a fair trial on those portions of our cities where it is most needed. The and it is quite probable that for some time roads of this kind will be most popular. The objections to the elevated roads that have an end to severe tests called for by strangely enough, not those that have any real existence. The frightening of horses is now an insignificant matter and scarcely ever occurs. The fall in the value of adjacent property which was anticipated has not been realized, and, on the contrary, it is now rumored that along the line of one road, at least, stores will bring higher rentals than before the road was built. The noise on the first road erected was reduced to a minimum, and the trains do not cause as much annoyance as an empty ice cart or that the crime established in this case was truck passing through the street at a trot. paring 1874 with 1862. The falling off in The Gilbert road, however, is a nuisance in the community, and could be committed net imports since 1873 is, of course, due to this respect and makes a great racket. This only by persons holding high trusts, and is partly owing to faulty design and partly to heavy cars. by the increased export of domestic products the leakage of oil, and the cinders thrown willing to agree that corporations ought to from the engines are very serious matters put a safeguard around the most trustand justly cause much complaint against the worthy men that they might not be tempted; new line. Much of this is owing to the in- that he had no doubt the prisoner had unexperience of the officers in a branch of dergone all the punishment necessary from for which the contractors pay \$11 per year the subject is carefully considered there will railroading which developes a thousand new personal considerations to himself, but it per man, and yet the company are seriously

With New York's experience as a guide of elevated roads. As a relief to narrow leaving the surface roads with only the 'short fares" to deal with. If properly constructed they can be put in the narrow est streets without difficulty. In wide streets they can be put in the middle of the street, as in Third avenue, without being obstructions. The shade which they give in beast passing below. In the matters of noise and freedom from obstructions to the street the single column road is far superior to the so-called Gilbert road, and although we have not the exact figures in regard to the quan upon our commercial relations with that tity of iron used and the cost of erection, Were the amount of our exports the single column is doubtless greatly superior to the cross-girder system. the reverse true the single column style would still be vastly preferable. By judi-cious selection of routes almost any given location in a city can be reached, and by the use of long and short columns grades may be reduced so as to be easily within the power of the dummies employed. For this kind of work experience in New York points to the fact that the hardest of anthracite is the most desirable fuel in order to reduce the cinder and smoke nuisance to a minimum. In this city stations are located at the intersections of crossing lines of horse cars, upon the most important of the crossing thorough fares and at points nearest great local centers. While the speed of the trains is by no means great, it is ample for the work. Even in France, where the advantages of and makes it possible to more than double the size of our largest cities without increasing the time consumed in passing between tionists are able to divert to their own the residences and business portions. In this

various reasons, the opposition of the property holders being among the chief. One of the principal changes likely to be produced by the elevated railroads is the introduction of what may be termed two-story streets. Already some of the larger stores in the vicinity of the depots are talking about connecting their second floors with the platforms of the stations. There seems to be no reason why this should not be done all along the street, so as to make a second sidewalk at the level of the rails. The advantages of such an arrangement would be very great. The lower sidewalks would be permanently protected, while the second floors would have advantages in the way of light much superior to those upon the surface. Altogether it is quite probable that within the next ten years the internal economy of New York city will be very materially changed by the introduction of the elevated railroads.

#### Proving Chain Cables. We print in another column a communica-

tion from Commander L. A. Beardslee. U. S. N., upon the proof strain of chain cables. There are few articles in the whole range of mechanical construction upon which more implicit dependence must be placed, and upon the perfection of which human life and property is so largely risked. A flaw in a chain cable not unfrequently works as serious a loss of life and property as a boiler explosion. To the merchant marine and the navy, sound, strong chain is of the highest importance. At a very early day this was recognized, and many years ago the strength of chain cables was made a subject of investigation. Tables showing the amount of strain which good cables ought to be able to bear were then made, but unfortunately these tables are incorrect. and in some cases worse than useless, since they impose strains which are greater than the elastic limit of the metal, and which in chain of the larger sizes do serious and permanent injury. Up to the time when the United States Board undertook the investigation of the subject, only information road companies, the horse interest and the obtainable was that derived from the British conservative element of the community, it Admiralty proof tables and the less known seems improbable that steam on surface United States tables. Commander Beardslee points out very clearly the fact that the former are incorrect, and that even the latter elevated road has taken the public attention, are not wholly accurate, although the strains imposed are not above the limit of elasticity of the metal. This paper will, we hope, put been urged with most vigor in the fight Admiralty tables. The importance of the which has been made against them are, knowledge gained by the United States Board during its experiments, and the pressing need which the public has for the results of these experiments, put in such shape as to be immediately useful, should be great enough to induce Congress to make the necessary appropriations for completing s work which has been so well begun

In passing sentence on Chase, the defaulting mill treasurer of Fail River, the judge made some very sensible remarks. He said one of the most dangerous to the welfare of such conduct was demoralizing to those The dropping of tools, coals, holding less important trusts; that he was real estate. The court holds that as the be found no occasion for surprise in the fact conditions. None of the troubles are insur was necessary that something should be done discussing the desirability of terminating the

to deter others from the commission of such offenses.

#### A Business View of Certain Business Questions.

The address of Mr. S. S. Jewett as President of the National Association of Stove Manufacturers, which will be found in its proper place in our report of the meeting, ontains many suggestive passages which, did time and space permit, we should be glad to discuss at length. Perhaps we shall find them fruitful texts for articles in future issues, but for the present we can give them only brief consideration.

Whether Mr. Jewett's congratulations to the trade on the adoption by manufacturers of a cautious and conservative policy, leading them to restrict production within the natural demand of the market, are warranted by facts, is a question on which it is probable there will be found room for differences of opinion. In one sense Mr. Jewett is right. Probably the manufacturers are not generally carrying many of last season's goods, but it does not follow, considering the means adopted in many cases to get rid of them, that the relation between production and the actual consumptive requirements of the ountry has been as close as a good business policy would have dictated. The existence of a healthy relation between them is not indicated by the prices at which manufacturers have been content to sell goods during the past year. We do not, as the rule, trouble ourselves to find out what manufacturers are really selling for, but we have given some attention to the cost of manufacturing, and have learned enough about the prices at which many stoves are sold to satisfy us that many manufacturers have either knowingly or ignorantly sold for less than net cost. We express our honest convictions when we say we do not be-lieve a majority of our stove manufacturers know what their goods actually cost them. Indeed, we have proof that cost is often widely miscalculated. This is too large a subject to discuss briefly, but it is one of great practical importance, and one which should receive full and intelligent discussion at the next meeting of the Association. Mr. Jewett may be correct, and he is certainly sincere, in what he says on this subject, but we think there is room for very much closer adaptation of production to consumption without entailing the danger of a scarcity of stoves, or an advance in prices which will yield manufacturers profits disproportionate in largeness to the amount of capital required in their business. With regard to the improvement in the

character of stoves during the past half year, Mr. Jewett is undoubtedly correct in what he says. It is a complaint often heard that we have a great deal of change with very ittle real improvement in stoves. We cannot discover that this is warranted by facts. Certainly the inventors of useful improve ments cannot complain that they are not appreciated and adopted by the trade, however much they may complain of the difficulty they experience in securing a recognition of their moral and legal rights. We believe that a majority of our manufacturers honestly desire to improve their goods as rapidly as possible, and to make each season's product better than the last. In this they are measurably and sometimes conspicuously successful; but we are compelled to admit that comparatively few stove manufacturers give proper attention to the study of the laws of nature which govern combustion and control the workings of a stove. It is not unusual for a manufacturer to make or purchase a set of patterns and proceed to manufacture a large stock of some new stove without a single experiment or test. If it works well, so much the better; if not, they change it. We are of the opinion that there will not be much longer any room for empiricism in stove manufacture. It will be with that as with most other industriesscience will take the lead and keep it, notwithstanding the fact that, as a class, stove anufacturers affect to hold theoretica knowledge in light esteem.

Mr. Jewett's strictures upon the mistaken policy of forcing the sale of goods when none are wanted, are timely and judicious. The healthiest conditions of trade are found when stocks are carried nearest to first hands. The manufacturer then knows how to adapt his production to the needs of his The fact that goods which have trade. passed from first to second hands are practically no nearer consumption than before this transfer was made, is commonly lost sight of by manufacturers. The mistake of the dealer who buys goods he does not want when he buys them, invariably reacts upon the manufacturer.

What Mr. Jewett says about convict labor unquestionably expresses his own views and those of a majority of the trade. We are, however, compelled to say that what he points to as the end and aim of the anticontract movement is practically impossible of attainment. If they mean to repeal the laws authorizing the contract system they are working for something practicable if not desirable; but the time will never come when it will be possible to lease convict labor at a price approximating that which skilled labor commands outside of prisons. It is not worth as much and never will be. We lately visited some coal mines in Georgia which are largely worked with convict labor,

contract as unprofitable and employing only free miners, whom they cannot expect to get for less than \$11 per week at the very least. A man is a man, but it makes a difference whether he works as a journeyman or an apprentice; whether he can be retained or discharged at will, and whether the employer can control him or is dependent for the discipline and order of his works. and the industry and conduct of his men, upon some official who has no interest in his business and cares not whether he succeeds or fails. There are two sides to this question, and it is well that both should be heard. When the State charges for the labor of its convicts the market value of labor outside prison walls, it will have no bidders though it offer every other possible inducement.

Mr. Jewett's concluding remarks about artificial obstructions to recovery growing out of reckless legislation and partisan strife, reflect the almost unanimous sentiment of the business community. We commend them to our readers as sensible and sound. Indeed, the whole address is admirable, and we congratulate the Association upon having so long retained the services of so competent a president.

The public meeting lately held by the workingmen of Milan, Italy, to give expression to their earnest demand for peace, is a significant indication of a growing determination on the part of the people to assert their right to life, liberty and prosper ity. The societies marched to their place of assemblage, organized a meeting and went regularly to business. The speakers de-nounced war as barbarous and inhuman, as destructive of life and property and as entailing grievous burdens of debt to be paid look, ask a few general questions of who from the earnings of labor. As an earnest of their sincerity the meeting approved and ordered telegraphed to the Czar of Russia and the Queen of Great Britain and Ireland the following message: "The Italian committee of workingmen exhort you to avoid war and submit the Eastern question to arbitration." When the workingmen of all of any information concerning them pre nations have become equally wise, wars will vents those who are interested from satisfy nations have become equally wise, wars will cease. Kings and cabinets will be powerless to make war unless supported by the will of the people, who are easily fired with enthusiasm and who often mistake a national crime for a vindication of the national We fear it is too soon to hope for a realization of the prophecy that

"—the common sense of most shall hold a fretful realm in awe, And the kindly earth shall slumber, lapt in universal law,"

but its fulfillment rests with the masses of the people whose over-readiness to bear arms and use them against their own best interests renders war possible.

In our last issue the value of the two important tables showing the general foreign trade of Great Britain in 1875 and 1876, introduced in our editorial entitled "Fluc-tuations in England's Trade Since the Panic," was unfortunately marred by a typographical error. In the heading it was announced that the amounts were stated in "thousands" of dollars. We should have said that they were stated in millions of dollars. The error was an obvious one to statisticians, but might mislead those unaccustomed to the study of figures.

We print elsewhere an interesting communication from Mr. J. H. Winser, our consul at Sonneburg, Prussia, on labor, wages, cost of living, business and finance in Brandenburg; also a similar communication from Mr. Fox, our consul at Brunswick. These communications give a very accurate account of conditions existing in Germany which have an important bearing upon our trade relations with that coun-

the Paris Exposition. The brief introductory remarks of our correspondent are of interest to exhibitors try, and we hope they will not fail to receive attention.

From our consular reports it appears that Italy as well as Switzerland offers a profitable market for American anthracite We give in this issue a report from Mr. Spencer, our consul at Genoa, and extracts from a letter from Col. John W. Forney, both upon this subject.

The Brazilian government has been compelled to bolster up its credit and replenish its empty treasury by having recourse to the dangerous expedient of an issue of paper money. The treasury was empty, the revenue was insufficient even to meet the running expenses of the departments, a loan could not be placed abroad except at terms almost ruinous to the credit of the country, creditors refusing to accept treasury notes in payment for their claims on the government, and the famine-suffering people of the north were in sore need of further assistancs. To meet these demands the Ministry recommended a further emission of paper

ference of opinion. Exchange thus far has been affected very little by it, owing to the redemption clause in the decree, but should anything occur to weaken confidence in the government, it is certain that Brazil will suffer seriously from this act of inflation.

### THE PARIS EXPOSITION.

Some Notable American Exhibits.

(From our Special Correspondent at Paris). Probably the readers of The Iron Age have heard so much about the opening ceremonies, the crowds of visitors, the disorder and the confusion of the Paris Exposition, that your correspondent does not need to occupy space with any general information of this kind. I wish, however, to call the attention of exhibitors from the United States to the fact that, as the rule, they are very imperfectly represented, and that the benefits they are likely to derive from exhibiting will be small unless they adopt a better sysem of dispensing information concerning their wares. At the date of this writing (June 11) many exhibits are not yet ready, and at those which are in position it is almost impossible to find any one who can give you the least information. They are either in charge of nobody, apparently, or the attendants are "doing Paris," or those who have them in charge know nothing whatever about them. At some of our largest exhibits one cannot obtain a card, circular or cata-This is all wrong. Visitors come, ever happens to be around, learn nothing, shrug their shoulders and walk away. Were it desirable I could give the names of a great many American exhibitors whose costly and elegant displays might as well be set up in the middle of the Sahara for all the good they will do to American trade. They naturally attract attention, but the absence ing even a natural curiosity to learn some-thing concerning them. I would suggest that, so far as possible, every firm making an exhibit here should be represented by a responsible person—a principal if possible who feels enough interest in the object of the exhibition to see that proper attention is paid to visitors. Circulars, descriptive pamphlets and catalogues printed in French should be accessible to all who want them—with of course, a judicious intelligence in with, of course, a judicious intelligence in their distribution. The quality and price should be given, and as many particulars about their manufacture as is likely to be of public interest. The Iron Age Library has been useful in supplying this information, but it should not be a sole dependence. Possible customers must be sought and interested by those with goods to sell, and this can best be done by supplementing an attractive display by the dissemination of information concerning it. Those who appreciate this most fully are likely to find the exhibition most beneficial. With this brief introduction, which I hope will not be without effect, I will proceed to describe use to first one of the control of describe such of our exhibits as first appear in my note book :

The display of tacks, shoe nails, &c., of A. FIELD & SONS,

Taunton, Mass., and 78 Chambers street, New York, is not only very attractive, but very interesting just at this time, when so much has been said in some English journals about the asserted superiority of American tacks. It has been carefully examined by a large number of gentlemen interested in the manufacture of tacks and nails, and great anxiety is manifested to learn the great anxiety is manifested to learn the details of the process of manufacture and the means by which such sharp points and broad heads, without weakness at the joining of the head and body of the tack, are secured. The arrangement of the exhibit shows great ingenuity and skill. The firm occupy a space of about 22 by 6 feet, on which they have erected a handsome structure composed of glass cases resting on nests. We begin this week our notes of impor-tant American and foreign exhibits at of drawers and surrounded by a rosewood railing. In the center of this structure, and resting on the cases, is an elaborately carved picture frame about 18 feet long and proportionately high, showing on one side an excellent painting of their works. On the opposite side of this picture is a display that is as beautiful as it is unique. On a large is as beautiful as it is unique. On a large canvas is a picture of the American eagle with flags, shield, &c., surrounded by stars in brass tacks. All the lettering on this card and all the ornamental scrolls, of which there are several, are done with tacks of different kinds and colors. To give some idea of this piece of work we copy the let-tering, which is as follows: "A. Field & Sons, Taunton, Mass., manufacturers of copper and iron tacks, carpet, brush and gimp tacks, tinned tacks; lining and saddle nails, tufting nails and buttons, shoe nails: nails, tufting nails and buttons, sad, green, patent coated tacks in colors, red, green, blue, drab, brown and maroon, glaziers' coints " and in handsome scrolls, " japanned lining nails, common and patent brads, an-nealed trunk and closet nails, hob and Hungarian nails." The lettering on this card is handsome and the display type is well balanced. The immense variety of tacks, &c., used is worthy of notice, and the fitness of the tacks to the sense they convey has also been happily carried out. Tastefully arranged in many colored paper boxes in the surrounding glass cases are samples of over 2042 varieties of tacks and nails, japanned, self-color, blued, galvanized, tinned, brass,

bring anything more than temporary relief is a question upon which there is a wide dif-ference of opinion. Exchange thus far has number of small bins containing some of the most common sizes of nails for distribu tion. The nails, in shape and finish, fully sustain the reputation of our American manufacturers. Some specimens of the chiselpointed nail, for which this firm has the exclusive right of manufacture in the East of the United States, and Shoenberger & Co., of Pittsburgh, in the West, are also shown. The claims of this nail have already been fully set forth in our columns, and the dif-ference between them and the common nail in its action on wood illustrated. The annual product of this firm is 6000 tons, or 120,000 kegs of nails.

The exhibit of horse-shoe nails, pointed, polished and finished, of

THE GLOBE NAIL CO.,

in the Agricultural Section, is attracting good deal of attention. The nails are freely given to those who are interested in them, and the expressions of admiration of their finish, smoothness and unformity is universal.

Those who examine them further will find the material of the nails—cold-rolled iron—to be of the very best quality, showing a hard, close fiber, which gives stiffness and permits of the use of a thinner and lighter nail, and their ductility allows the finest ng. The process of manufacture s uniformity in length, width and In use it is claimed that their smooth, clinching. polished surface to a great extent prevents the usual splitting and mutilation of the hoof, thereby saving considerable time that would otherwise be consumed in driving. In case "pricking" occurs from the remnants of an old nail in the hoof, which will sometimes happen notwithstanding the utmost care, it is claimed that these nails do not produce inflammation, as would an uneven, rough or

Seymour, Conn., and 120 Broadway, N. Y. exhibits samples of the Kerite insulated tele graph wire and cables. Kerite is a very lexible and, as is claimed, a practically in destructible compound for insulating tele-graphic wires and cables. The French Comgraphic wires and cables. The French Commissioners to the Philadelphia Exposition in their report say: "The coating of the wires (and among them he exhibits some of an extreme fineness) is of great pliability, and possesses perfect insulating properties. We took one of his wires, covered with a coating of 1-40 of a millimeter, and plunged it in water containing 10 per cent. of sul-phuric acid, without its being injured in the slightest degree by this contact. These wires possess the great advantages of not becoming brittle or porous, and of being becoming brittle or porous, and of being able to withstand the different actions of air, light and water without any injury. We examined specimens of these wires which had been in use for upward of two years, the authenticity of which was vouched for, and found no apparent traces of deprecia tion.

T. SHRIVER & CO.,

of New York, exhibit four cast-iron piano frames cast by them for the well-known piano manufacturers, Decker Bros., Hazelton Bros., Steck & Co. and Albert Weber. Two are finished in bronze and two are as they came from the mold. To those who know the great difficulty in making thin castings of the size of these pieces the success is a constant marvel. The castings are true, no warping, the edges straight and the flat surfaces as smooth as though rubbed with emery. An English gentleman who with emery. An English gentleman who examined them with us would scarcely credit the evidence of his own senses. Our American light castings are a constant der to foreigners. This firm also exhibit in Machinery Hall a number of samples of letter presses.

THE SNELL MANUFACTURING COMPANY, of Fiskedale, Mass., exhibit a case of beauti fully finished augers, reamers, screw-drivers, bits and some samples of handled gimlets. The augers are from one-fourth of an inch to 2 inches in diameter, and from 6 to 30 inches long. They also exhibit two of Snell's pat ent boring machines.

BEVIN BROS. MANUFACTURING COMPANY. of East Hampton, Conn., make a large and of East Hampton, Conn., make a large and very complete display of bells. In strapped sleigh bells their assortment is immense, with a variety in their finish that will suit all tastes. They also show a large variety of hand bells and handled dinner bells, both without a trial. If you show the records wheels without a trial. If you show the records or beds from which the iron is made that cast wheels have made: if you mention the additi

interior of buildings, especially of stair rods and cornice poles, which received rods and cornice poles, which received such flattering commendations from the English Commissioners to our Centennial

321 Broadway, New York, make quite a good display, including in the lines men-tioned a large number of beautiful and artis-tic patterns of stair rods in various shapes brass, several colors of bronze and in nickel. For stair service they also show stamped brass in neat and graceful designs for covering the edges of the steps to prevent wear. Three wooden steps with this cover-ing form a part of their exhibit. For cur-tains and window drapery they show some beautiful styles and patterns of cornice poles and rings for the same, with knobs and hooks of brass, bronze and gold, silver and nickel plate. Other manufactures of this house, such as dog collars, brasswork, &c., are shown. The whole exhibit is very neat and attractive.

M. GOULD'S SONS,

Newark and New York, exhibit a line of

these appliances, for of many of them they seem to have no conception. A number of dog collars are also shown, both of sheet nearly double that of the wrought. There leather.

their manufactures. A large export trade could be built up in these goods. Pittsburgh could be built up in these goods. Pittsburgh manufacturers have already sent invoices to Europe, most of which was for re-export. One house has quite a large trade with Europe in tumblers and goblets, and in chumneys some business is done. A full exhibit of these lines of goods would have been of great advantage to our manufacturers.

W. & B. DOUGLAS,

Middletown, Conn. This old and well known house, whose works were founded in 1832, show 350 sizes and styles of cistern, yard and force pumps, both hand and power, hydraulic rams, garden engines, yard hy Irants, street washers, grindstone frames &c. Their space, though covering over 1000 square feet, is hardly adequate to show the goods to advantage, and yet the pumps have been so arranged as to give any one an idea of the exhibit by a passing glance. To the front is placed the hydraulic ram, which, although originally a philosophical experiment of Mongolfier's in 1794, was first reduced to a practical machine by this house. The working model is of glass, which shows the whole machine, thus demonstrating to the most incredulous that there is no hidden pump, which many deem to be the case. From morning until night this little machine is surrounded by a curious crowd, who cannot conceive how, with 6 ft. fall, this little article elevates the water to a hight of 40 feet, apparently with no force applied. Arranged on 20 different sample stands, each containing a different family, we find the well-known "Douglas" cistern, pitcher and small house force pump, for which this house is o justly celebrated, constructed both in iron, brass, copper and glass, to meet the wants of buyers from all parts of the world to which these goods are sent. Among the novelties shown we cannot pass without mentioning the pendulum pump, made in such a manner that by simply opening or closing an air plug the pump is adapted to force or lift. By this construction a simple crank shaft is made to do the duty of the usual heavy stand and brass rods, which make such heavy work in the old style of force pump. The "pendulum" is claimed to be by far the easiest working force pump made. Against the wall are placed their regular styles of lift and force pumps, both single and double acting of iron and brass single and double acting, of iron and brass, which are too well known to need any detalled description. However, we could not help noticing the double-acting "B" pump, with detachable valve plate, by which the valves are reached for repairs without disturbing the suction or discharge pipes; this strikes us as a long-needed improvement in pumps. The exhibit includes no less than 50 different styles of yard and engine yard pumps, all of the most improved pattern, which for finish are unsurpassed. We were also shown a new pattern of yard hydrant and street washer, which is so constructed that the water can be cut off, and valves removed for repairs, without digging up the whole affair, as in the more ancient styles. Besides the above goods we were shown pumps for ships, windmills, quarries, fac-tories and other uses too numerous to mention; in fact, no one has a want in the pump line that this house cannot supply. So well known is the "Douglas" pump on this side the water that foreign manufacturers do not hesitate to copy them, and in some cases even print in their catalogues that their goods are made after the Douglas system. To an American who knows the value and the superiority of chilled cast wheels of good

make, such as are easily obtained in the United States, the criticisms of foreigners on these wheels are very amusing. It is assumed that a cast-iron wheel must be weaker than a wrought-iron one because the tensile strength of the former is less than to bells they exhibit brass and bell from the use of these wheels, and this notmetal kettles, waffle irons, &c.

There are but two displays in the line of brass goods for upholsterers' use in the some of the worst accidents have occurred from wrought iron or cast steel tires break ing in frosty weather; if you mention that Pullman cars constantly run through from New York to Chicago, 1000 miles, without only for rest, and often at speeds of 40 to 50 miles an hour, making in some cases 12,000 miles a month; indeed if you give any of the well-known facts about the use of these wheels in America and elsewhere, they are received with a well-bred stare of incredulity; for does not wrought iron show a tensile strength of 40,000 to 60,000 pounds and steel even higher than this, while the best cast iron shows only 30,000 to 40,000—ergo, steel and wrought iron wheels must be better. One reason for this lack of faith is doubtless to be found in the poor results obtained with chilled wheels made of European irons. In other cases it may be due to the method of casting, the inexperience of the makers, or to the use of inferior irons. But any one who will examine the evidence fairly can have but little doubt that chilled cast wheels are to be preferred to the wheels to which we have referred in comparison. The wrought-iron wheel, especially the Eng-

metal, chains and embossed and metal-bound is an impression current that for resist-leather, ance to shocks and vibrations a soft leather.
The only American glass exhibit is contained in a small case shown by the

MERIDEN FLINT GLASS WORKS,
Meriden, Conn., and consists of a few sample goblets and wine glasses. The manufacturers of American pressed ware have made a great mistake in not exhibiting full lines of their manufacturers. A large export trade their manufacturers. cast-iron wheels in comparison with wrought iron ones are nowhere more visible than in mountainous countries where the curves are sharp and frequent and the gradients steep, requiring the use of the brake the whole length of the descending grade. In South America especially, the evidence on this point in favor of chilled wheels against both wrought iron and steel is overwhelming. The evidence from Canada is very important. The roads in that country are owned by gentle-men and operated by engineers whose sym-pathy and much of whose experience would be in favor of the wrought-iron wheel. The heavy snow storms and low temperatures of Canada are very severe upon any wheels used, and result in such tests as are utterly unknown in England. Under these circumstances the engineer of the Great Western R. R. of Canada puts the life of chilled wheels on his road at 160,000 miles. Some years ago Mr. A. M. Ross of the Grand Trunk road gave the preference decidedly to chilled cast-iron wheels over the English wrought iron. This evidence could be continued almost without end. Now, in view of this road of the continued almost without end. of this mass of testimony, it is rather ridicu-lous that so many well-informed men will from day to day stand before the exhibits of chilled car wheels mentioned below and de clare they are unsafe and ought never to be put on cars. It is simply absurd, and only shows their ignorance of facts. The mass of people ought not to be expected to know these facts, but those who have the care of railroads intrusted to them certainly know better, if they do not they are derelict in

neir duty.

The most complete display of the American chilling irons, their ores and products, is that of the

BARNUM RICHARDSON COMPANY.

of Salisbury, Conn. It comprises specimens of several of the ores used in the manufacture of the celebrated Salisbury cold or warm blast charcoal irons, the irons themselves and a large display of car wheels. They also furnish, what is of more importance than a mere exhibit, some very valuable publications in which the mode of manuis claimed facture and the merits of chilled cast iron car wheels are set forth, together with records of service of wheels, and the admirable and exhaustive paper recording the examination and tests of this iron made by Prof. Thurston of the Stevens Institute of Technology. The Barnum Richardson Company are certainly entitled to the hearty thanks of all Americans for this exhibit, and regret is very often expressed that it had not been supplemented by a display of our rich ores used in the manufacture of pig for

Bessemer steel and merchant iron.

The Barnum Richardson Co.'s exhibit consists of ores from the Old Hill Mine at Salisbury, which has now become so famous, as well as from the Chatfield and Davis mines, and specimens of the Salisbury pig iron made and specimens of the Satisbury pig from made from these, one piece of which is 100 years old, and chilled wheels. The ores exhibited include specimens of the beautiful stalactitic and botryoidal formation, with their rich coating of polished black oxide, that are so well known as products of these mines, as well as massive lumps of the open, porous, easily-worked hematites of the Salisbury region of Connecticut. Specimens of the different numbers of iron broken to show the chill are also shown, together with sections and fragments of wheels purposely broken for the same reason. These are contained in a beautiful gothic, upright show case. In the rear of this are two pyramids case. In the rear of this are two pyramids of chilled wheels for railroad service from 22 to 42 inches in diameter, and wheels for trains or street cars 30 inches in diameter. There are also two piles of Salisbury pig iron of the various numbers broken so as to

plain and plated, table, hall and locomotive gongs, toy, house and car bells, and a variety of bells for electrical machines. In mixing the different ores, and in casting the wheels by mixing the different grades and numbers of iron, they are enabled to get toughness and strength combined with the degree of hardness necessary to stand the wear to which they are exposed. The chills shown by this company are remarkable, not only for their extreme hardness, but also for only for their extreme nardness, but also for their close incorporation with the iron of the unchilled portion of the wheels. In regard to the mileage of the wheels made by this company, they assert that

from reliable information in their possession they feel safe in claiming 50,000 miles as the average service of 33-inch wheels under passenger cars. The reports of the Lake Shore and Michigan Southern Railway show that some of the wheels made of Salisbury iron have run as follows:

4 wheels averaged ......

These are, of course, their longest lived wheels and are exceptional cases.

Messrs. Upson, Walton & Co., Cleveland, 

# AMERICAN SCREW CO.,

Providence, R. I.,

# MANUFACTURERS OF MORE THAN 4000 VARIETIES OF PRODUCT,

AND INCREASING THE ASSORTMENT DAILY.

Machinery employed contains important inventions recently patented, and which are designed to produce Screws at a lower cost to the consumer than has ever been attained.

All goods are distributed through the Hardware trade, to whom a liberal discount will be allowed.

 $(No.\ 235.)$ 

#### INTERNATIONAL EXHIBITION.

PHILADELPHIA, 1876.

The United States Centennial Commission has examined the report of the Judges, and accepted the following reasons, and decreed an award in conformity therewith.

PHILADELPHIA, November 8, 1876.

Product: Iron, Brass and Steel Screws, Tire and Stove Bolts, Rivets.

Approval of Group Judges.

Name and address of Exhibitor: American Screw Company, Providence, R. I.

The undersigned having examined the product herein described, respectfully recommends the same to the United States Centennial Commission for Award, for the following reasons, viz: Being of a quality nearly approaching perfection, showing the highest attainment in this branch of manufacture.

G. L. Reed. Signature of the Judge.

Approval of Group Judges.

Daniel Steinmetz, G. L. Reed, J. Diffenbach, Jas. Bain, J. D. Imboden, Dav. McHardy. Chas. Staples,

A true copy of the record. Francis A. Walker, Chief of the Bureau of Awards.

A true copy of the record. Francis A. Walker, Chief of the Bureau of Award Given by authority of the United States Centennial Commission.

A. T. Goshorn, Director-General.

[L.S.] J. L. Campbell, Secretary. J. R. Hawley, President.







After forty years' experience we offer to the trade our Centennial Screws, patented May 30, 1876, as the best we have ever known.

The method of manufacturing is also patented, and we are changing our machinery as fast as possible, to manufacture the improved article only. To introduce them, they will be sold at the same price as the old style screw.

The new screws will be packed in manila colored boxes with the new label covering end of box, and enlarged figures showing plainly contents.

To distinguish this serew we have adopted a trade-mark, which is also secured to us.

The accompanying engravings show the progress of making screw from the old blunt point to style now adopted.

Experience has shown that the weak noint of screws, as formerly made, is at the heel of the thread, where all 1846.
Patented August 30.

1876.
Patented May 30.
COVERED BY TRADE MARK.

the strains of forcing the serew into the wood naturally concentrate.

To avoid the sharp angle existing in the old style of screws has been the aim of all manufacturers, but every expedient hitherto adopted has proved as objectionable as the evil complained

It will be seen in our new screw that not only is the sharp angle avoided, but the strength very much increased, as illustrated. See sections at lines.

#### CLAIM.

"A Pointed Wood Screw having the outer periphery of the thread upon its body cylindrical, while a portion of the body below the thread and near the neck is conical, the remainder of the body to the point being cylindrical, and yet naving all the thread brought to an edge of a constant angle, without jogs in the paths between the threads, substantially as described."

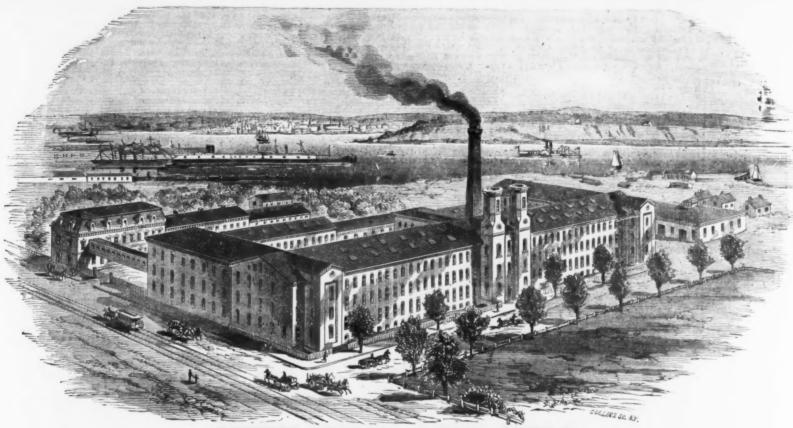
On the opposite page will be found illustrations of the various Works of the company.

Section at Line C D

Section at Line E F

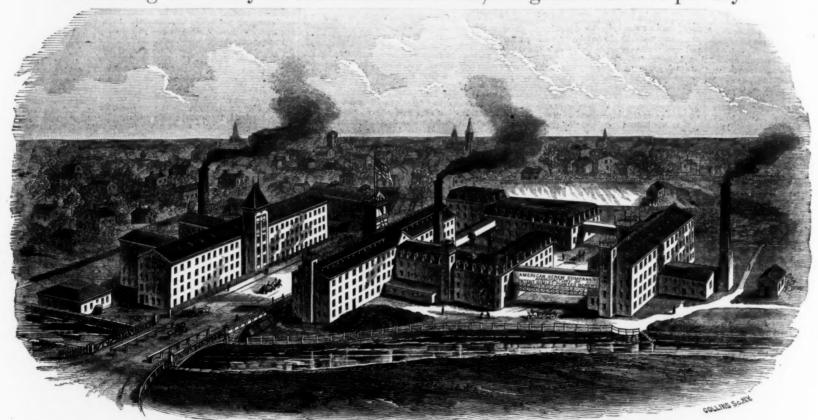
Section at Line E F

Section at Line A



NEW ENGLAND MILL.

Containing Machinery for the Production of 22,500 gross of Screws per day.



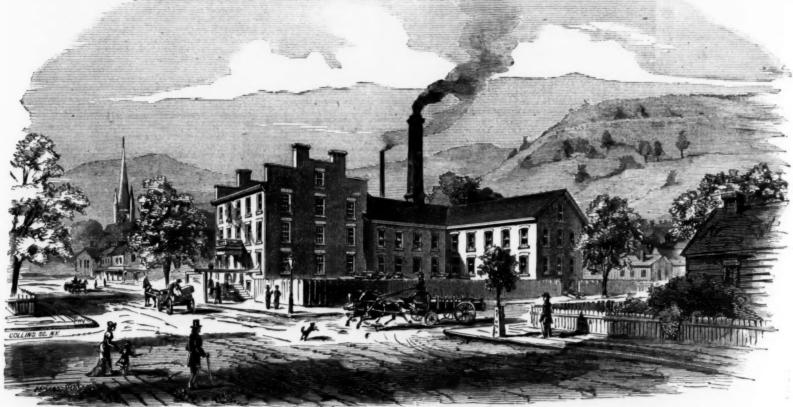
BAY STATE AND EAGLE MILLS.

### BAY STATE MILL,

For the Production of Stove Bolts, Tire Bolts, Rivets, Lock and Machine Screws, &c.

### EAGLE MILLS.

Capacity 22,500 gross Wood Screws per day



WORKS AT DUNDAS, ONTARIO, CANADA.
Capacity, 4000 gross Screws per day.

#### National Association of Stove Manufacturers.

The seventh sem annual meeting of the National Association of Stove Manufacturers was held at the new rooms of the board of Trade, C'eveland, Ohio Wednesday and Thursday, June 19 and 20. The meeting was called to order at 11 o'clock on Wednes-day by President S. S. Jewett of Buffalo. About 40 gentlemen responded to the roll

Mayor Rose and other guests were present, and the press was represented. After thanking the Board of Trade, who had kindly tendered the use of their rooms, the President delivered an address, from which we

#### Address of S. S. Jewett, President.

Gentlemen of the Association: Since our recent annual session in January we have passed over that portion of the year which usually develops but little of interest to us in the course of our trade as manufacturers.

As far as my knowledge extends, a cautious policy has governed the production of stoves, restraining its volume within the natural demand, so that no unusual increase of stocks now interferes with our calculations for the future. In this respect stove manufacturing rests upon a basis more substantial than it has at any time during our existence as an organization. The views repeatedly expressed in various meetings by a large number of our members have taken desp hold upon the minds of all in our line, wakof stoves and ranges will exceed the atural demand for years to come. Heath and vigor can now be seen where chronic disease and weakness formerly prevailed. The inversely laws of weakness formerly prevailed. exorable laws of supply and demand have compelled us to bow down before them and to recognize their inflexible power. I am also positive that the character of

am also positive that the character of the stoves manufactured has also been greatly improved, in many respects, to a degree equal if not superior to the progress made in any line of mechanical skill. The members of this Association do not remain idle, con-templating with egotistical satisfaction the style and quality recently in vogue among them, which are rapidly being adopted in outside foundries, where they fail to realize the advance in our art. But by contact with each other in our regular meetings we are more fully posted respecting improve-ments in stoves, and better able to gratify the cultivated taste of the present enlight-ened age. of this Association do not remain idle, con-

ened age. The character of the times is faithfully reflected in the appearance of our wares which, like mirrors, show upon their surfaces that which is cast upon them, as altered by the medium through which it is transmitted. the medium through which it is transmitted. Consumers are no longer satisfied with the clumsy proportions and rude, ungainly ornaments of past years; they demand that perfect proportions and exquisite decorations shall be combined in these articles of necessity. It may be suggested that "history repeats itself," and that while some of us believe we are contributing to progress in designing our wares, yet soon it will all be rejected to revive what is now being abandoned. Let no manufacturer solace himself with such meditations unless he desires to be with such meditations unless he desires to be aroused from his slumbers only to see his trade lost, never to be recovered. hope must be laid aside to be supplanted by the ideas which are the fruit of our active times. Then the low level of stagnation

will pass away from under us as we are able to step up on to the higher ground of prosperity. Here is a fact that the whole trade will do well to consider: With no present over-production, we find in the lofts of manufacproduction, we find in the lofts of manufac-turers quite a number of old styles which, in addition to the large proportion of such goods in retailers' hands, makes in reality a surfeit of the kinds now recognized as in-ferior or low grades. The retail dealers all say they have in stock enough of such goods, and need no more for a long time to come. While I am well aware that every dealer must keep in stock enough of them to sipoly. must keep in stock enough of them to supply a certain class of trade, yet it is also clear that less of them will be needed in propor-tion to the higher grades than ever before. Even if a dealer sells out all his inferior Even if a dealer sells out all his inferior stoves he must buy more in order to cater to custom where he makes no money, and which for a year or two has been the larger proportion of the trade. People who could afford better grades have held aloof, not buying at all, until now they too are appearing in market, thus increasing the proportion of the demand for first-class goods, and ing dealers to be extreme cautious in purchasing inferior grades. Dealers are carefully watching this feature, and will surely push the sales of higher grades of stoves which are now to be in great demand and on which they realize a feature. and on which they realize a fair profit. Manufacturers will do well to pay attention to this indication and draw from it whatever benefit this word of warning may contain. Let all bear in mind that improvements in proportions and ornamentation are the order of the day.

It affords me great pleasure to be able to congratulate you all upon the marked improvements you have made in the manner of advertising your wares. I might possibly provements you have made in the manner of advertising your wares. I might possibly mention this subject with regret, because I am deprived of the material for some humorous illustration or points for numerous jokes, yet it is much more agreeable to record this step you have taken in advance. I no longer find the mails loaded down with grotesque caricatures, embracing all sorts of animals that never emigrated from Noah's Ark, and I also miss the duck, in frilled pantalets, standing by a nondescript pianist and bawling in plaintive tones the touching ballad, "Who Cares for Winter Now." This improvement has often been mentioned to me by parties who have no interest in the stove business other than as consumers; they expressed themselves so well pleased with the change as to convince me that the former oddities must have failed to accomplish that kind of advertising which increases sales. It also strengthens my opinion that the style you now use must be It also strengthens my more satisfactory to you as manufacturers. It must show a more gratifying increase in the demand for wares, advertised in a man-ner consistent with the dignity of a respectable and legitimate trade

to us all. I mention the matter with some hesitation, because of the extreme difficulty which the case involves. I allude to the which the case involves. I allide to the strenuous efforts to push the sale of stoves at certain seasons of the year when there is no demand for them. The old practice of selling a full supply of goods at one time in order to forward them early to points then der to forward them early to points then reached only in the summer, perhaps is no longer possible. Dealers can now replenish stocks promptly at any season of the year, and every effort to force sales at unnatural times only invites concessions in terms and orices, which could easily be avoided by ceasing efforts when there can be no desire to buy. I will mention an incident here which may not be quite pertinent to this point, but has a bearing upon the policy pursued by manufacturers toward each other in the selling department. A thoroughly reli-able German, who is responsible for the cow able German, who is responsible for the cow story narrated by me at St. Louis, was vis-ited by a representative of a stove house. The German welcomed him, and of course they were soon "talking stoves." The traveling salesman asked him what he paid "Smith" for their stove. The German adroitly stated the price at four dollars less than he actually did pay. To which the salesman replied, "I will sell you as large and good a stove 25 per cent. less." The German saw at once the absurdity of such a statement, and declined to buy any goods of the drummer. I mention this to show that illegitimate efforts and assertions impossible

illegitimate enorts and assertions impossible to prove cannot accomplish results favorable to those who undertake them.

The members of this Association have good reason to rejoice over the repeal of the bankrupt law, which takes effect September 1, 1878. Your attention was called to this matter some two years since, and recognizing its great importance, you at once re-sponded with vigorous efforts to secure the repeal of a law which had been so perverted repeal of a law which had been so perverted from its original purpose as to protect rogues in rascality of every description. Although success in such efforts seemed almost impossible, yet no energy has been lacking on your part. You have all, individually, collectively and continually, pressed forward in the good work, using every honorable means in your power to win the victory which has now perched upon your banner. Our triumph in this stubborn and protracted struggle teaches us that when we decide to employ our united strength to overcome any wrong. our united strength to overcome any wrong we may be confident of final succes.

The committee on convict labor have labored diligently since their appointment to arrest the attention of the public and interest all citizens in a matter which is workto arrest the attention of the public and in-terest all citizens in a matter which is work-ing serious injury to the laboring classes. The leaders in every organization have hat their attention called to the evil and, I be-lieve, will all be ready to aid the people in asserting the individual right of every work-ingman—that the price of his labor shall not be interfered with by the farming out of prison labor, at famine prices, to scheming contractors. The laborers are aroused, and contractors. The laborers are aroused, and are rapidly organizing to present their claims to all legislative bodies in such a manner as to obtain instant recognition. The committee consider that their work has just begun, and they propose to continue to do all they can to push the matter to final success. I take pleasure in reasserting all that I said to you in January, but with regret that I then alluded to it in such moderate language. The time has arrived when each candidate. The time has arrived when each candidate for a seat in any legislature should be com pelled to announce his views on this vital subject. No votes should be given for any man unless he has declared his intention fixed to put an end to the system. In ever honorable way the effort should be continued vigorously and persistently. Remember your success in securing the repeal of the bankrupt law. You were the first organization to advocate the repeal, and your ac-tion has been stamped with the approval of the nation. Let us be active in this matter, no matter how long it take, and work faithfully until the time arrives when we can say with pride: "Farming out of prison labor at prices less than honest labor receives in no longer pressible."

si no longer possible."
Such is the natural situation of affairs, with every indication pointing toward a future bright with prosperity for our trade and for all the industrial classes. If among ourselves nothing is done to disturb matters, we are at the commencement of an era of progress which will carry us far beyond any point ever attained in our history as a na-tion, or that has ever been anticipated in the glowing prophecies of our Fourth of July orators. All classes will feel its impulse. Agriculture, mines, manufactures, commerce and labor will share in the universal advance, providing that we do not ourselve place artificial obstructions in the way. It would at first seem absurd to suggest

such a doubt, but incidents in our politic life during the past two years have developed an undercurrent which was becoming so powerful as to alarm even the most conservative and profound thinking men of this country. It is not my ambition to appear as an alarmist, but I should fail to do my duty if I did not call your attention to this situ ation. As I am no partisan, I can do so free from political influence, solely from the standpoint of a citizen who is anxious for the welfare of his country and desires its prosperity above all other interests.

You are all familiar with the excitement which prevailed after the Presidential elec-tion of 1876 appeared to be involved in doubt, and how it was restrained by the ap pointment of an Electoral Commission, to whom both contestants agreed to refer the cases in doubt and to abide by the decision This board was considered by the representatives of the people to be the only way to supply for the time what the constitution failed to provide; and it was accepted by es as a welcome relief from the agi the masse tation which had been so protracted and so disastrous to the business of the country. In their exalted capacity the Commission dered decisions on all disputed points which were referred to them, and the Congress accepted them, thus terminating the political terment. Immediately thereafter the electoral votes were counted by the President of the Senate, according to the terms of the constitution, and the result declared. The President thus entitled to office was

There is, however, a feature in the selling of goods which seems to me unnecessary, and if abandoned the result would be beneficial were unfair and the title to the Presidency

Thus, with a President in office the country resumed its wonted quiet. In June, 1877, I said to you: "It is with profound gratitude that we here record that the political dangers which threatened the nation in January have yielded to wise counsels, and a peaceful termination of the Presidential struggle has restored and increased public confidence in the Constitution of the United States." Since then the laws of the land have all been faithfully exceuted as far as possible, in view of the fact that a few in the defeated ranks placed in the way every possible obstacle. There can be no doubt on this point that persistent can be no doubt on this point that persistent efforts have been continually made to weaken the Executive power of the government. The idea was in print 13 years ago that the power of the President should be reduced, and that point has not been overlooked in the interval since. This was shown by the reduction of the army, and by measures tending to impair its efficiency. So the navy was permitted to fall into decay. Similarly a tariff bill was proposed. cay. Similarly a tariff bill was proposed, which could have no other effect than to lessen the revenues of the government, and also damage the industrial classes who uniformly support the government. It appeared also in the refusal to pass bills that would benefit manufacturing interests, and thus do good to the laboring classes. It appeared most decidedly in the resolution passed by the House of Representatives to appoint a Committee of Investigation. have attempted at this late day to pass be hind the scenes, and endeavor to unmas the actors in that political play, and expose their intrigues must have been inspired by some motive other than a desire to establish the merits of a case. There was a motive power engineering this movement, and it carried with its success or failure either disaster to the people on the one hand, or a continuation of general prosperity on the

their resources in the way of money, lessen-ing their comforts, and even sacrificing their lives. It is they who rallied patriotically to fill the ranks of our immense army; from them came the multitude of those whose

names are among the fallen.

All interested in the general welfare of the country, whether as merchants, manufacturers, or as capitalists realized the dis-astrous effects of another upheaval. They, too, became active and exerted their influence to overcome the dangerous tendency of

the times.

Under this pressure on the part of all loyal citizens, the attempt has been foiled by the recent decisive action of the House of Representatives. This removes the apprehension which clouded the outlook for the future. I congratulate you that the continued prosperity of the country is now reassured.

The gratitude of the nation is due to Hon. Alexander H. Stephens and Hon. D. M. Key, who from their high vantage grounded the toesin of alarm.

the tocsin of alarm.

A serious drawback to the trade—and one which should be corrected as soon as arrangements can be made to that end-is the excessive modesty of its representatives. There is nothing more refreshing in business than the beautiful humility and the uncompromising antagonism to exaggeration for which every stove manufacturer is known; but these have their disadvantages. We live in an age of active and merciless com-petition—an age of recklessness and violence in trade—but the stove man is all unwitting of the demands of the times and clings to peace at any sacrifice. He never has in his manufactures features possessed by no other stoves; he never claims advantages over all competitors; you never hear him even whisper that he makes the best stove in the world. No, indeed; his statement is unvarnished, and he would no more think of savins a hundred per cent. in fuel and promoting comfort to an incalculable degree than he would think of making any other boasting representation. He does not claim to have produced the most perfect range in the world—not at all. On the contrary, he gives the inquiring purchaser the address of the manufacturer who has accomplished this has accom extraordinary feat. His range never broils without odor, it is not a celestial light that comes through his plate of mica, and his nickel knobs and hinges are not worth more than their weight in gold to the buyer! No, your stove man is shrinkingly modest, even though his fortune takes to itself wings and flies away, leaving him poor, desolate and forlorn. He may meet a demand or fancy that he meets a want which every other manufacturer in the country has failed to meet, but be never breathes, even to his next-door neighbor, that he has given to the world the greatest invention of modern times, and that the age he glorifies owes him a debt of gratitude it can never repay.

The base of our trade is modesty; and a carefully selected committee of this dignified body should give the matter thought and suggest a remedy for it. A scheme of pen-alty and reward might be framed, the impartial enforcement of which might go far to neutralize the effects of this growing evil. The universal habit among the gentlemen engaged in the trade of speaking well of the manufactures of their cotemporaries is absolutely ruinous in its consequences, and the many who do this thing should be regarded many who do this thing should be regarded as highly censurable, and should be compelled to use their own cooking ranges in their families and to rely for warmth and comfort in midwinter upon the base burners of their own manufacture. I would not advise resort to such a severe penalty in extreme cases, and where no doubt of guilt remained in the minds of those com-posing the tribunal charged with the re-sponsibility of adjudication. I would not have the members of this Association deem me cruel in even suggesting so terrible a penalty as the one I have named, but you the unapproachable superiority of each manufacturer's wares, and a hearty and vigorous condemnation of every other man's products will usher in for us an era of pros-perity, a very millenium of fraternal feeling and profit. Till that time comes we must suffer with what patience we may the embarrassments and annoyances growing out of the evils to which I have briefly directed your attention.

The address was received with numerous

expressions of approval.

Mr. R. P. Myers, of Myers, Rouse & Co.,
then extended a hearty and cordial welcome
to the Association on the part of Cleveland stove manufacturers.

Mayor Rose, of Cleveland, also offered an address of welcome. The reports of committees being then in

order, Mr. Isaac A. Sheppard, chairman of the Committee on Patents, to whom was referred the subject matter of the passage by Congress of a law to afford better security of property in patterns for metal castings, made the following report:

#### Mr. Sheppard's Report.

To the National Association of Stove Manufacturers of the United States—Gentlemen: In behalf of your Committee on Patents, to which was especially referred the subject matter of the passage by Congress of a law to afford "better security of property in patterns for metal castings," I would respectfully report that in January last respectfully report that in January last, immediately after the adjournment of the Association, your committee met in the room of the president to consider the subject.

After consultation, Mr. Chamberlain and

After consultation, Mr. Chamberlain and the undersigned were appointed a sub-committee to visit Washington and urge upon Congress the passage of the bill introduced by Mr. Sayler, of Ohio, at the request of the stove manufacturers of Cincinnati. At the time appointed I went to Washington, expecting to meet Mr. Chamberlain there but he was unavoidably detained at home. I made an appointment with Mr. Sayler for an interview with the Chairman of the Committee on Patents, to whom the bill had been referred, and on the following day we met Mr. Vance, the chairman of the committee, and he introduced me to the subcommittee, to whom the bill had been re-

mittee, and he introduced me to the sub-committee, to whom the bill had been re-ferred for examination. The committee being engaged upon other bills taking pre-cedence of No. 2022, I could get no definite time fixed for a hearing on the bill, and was informed that there would probably be no chance for a hearing for two or three weeks. weeks.

On Feb. 20 I again went to Washington On Feb. 20 I again went to Washington and saw several members of the committee, but the bill was in the hands of the chairman of the sub-committee, Mr. Douglas, and I could not get to see him. After consultation with Mr. Sayler and several friends in Congress, I thought it best to prepare a circular letter addressed to the Chairman of the Committee on Patents, setting forth the reasons for asking for this legislation; this circular was printed and mailed to the circular was printed and mailed to the chairman and each member of the com-mittee; the circular bears date Feb. 28, a copy of which accompanies this report, marked "A."

marked "A."

After some correspondence with Mr. Sayler and other friends, it was thought best for me to go to Washington again, which I did on March 14, and succeeded in getting a day set apart by the committee for the consideration of the bill. The day appointed was March 19. I immediately wrote pointed was March 19. I immediately wrote or telegraphed to the different members of our committee to meet me in Washington on our committee to meet me in washington on the evening of the 18th. Mr. Dwight Richard-son, in behalf of Mr. Richardson of New York, and Mr. Walter P. Warren of Troy, responded to my call in person, but the other members of our committee were unable

At the time appointed we appeared be-fore the committee and presented the griev-ance of the trade in regard to the counterfeiters and pirates that rob us of our propfeiters and pirates that rob us of our property. Various objections to the bill were made by members of the committee which we endeavored to remove. Eight members of the committee expressed themselves as favorable to some measure of relief, but could not support the bill in the form presented, and the bill was laid over for further consideration. consideration.

On leaving the committee room we immediately wrote to various members of our Asalso to their representatives urging the favorable consideration of the measure. On the following Tuesday (March 26) I again attended the meeting of the committee. Upon this occasion I was treated with marked consideration by the committee, inasmuch as they laid aside the general bill for reas they laid aside the general bill for re-vision of the patent laws in order to give me another hearing on bill No. 2022. The most serious objection presented upon this occasion was doubts as to the constitutionality of the measure, the opponents contend-ing that Congress had not the power to pass the bill in the form presented, and that if it were passed the courts would decide it unconstitutional. It was contended that in order to reach the object desired the foundation must be laid under the clause in the constitution relative to patents. Mr. ter, a member of the committee, stated that he had been endeavoring to frame an amendment to overcome the objection, but had not fully succeeded in satisfying himself in the matter. It was evident that the letters written by the manufacturers from the different sections of country had produced a favorable impression. The chairman and other members of the committee had been incompletely an extension of the committee had been incompletely and the committee had been incompletely an extension of the committee had been incompletely an extension of the committee had been incompletely an extension of the committee had been incompletely and the committee had been incompletely an extension of the committee had been incompletely and the committee had been incompletely an extension of the committee had b in consultation with the Commissioner of Patents in regard to the bill, and there seemed to be a general desire to give us protection, provided the bill could be amended so as to overcome the constitutional objections.

as to overcome the constitutional objections.

I was recommended to an attorney of great experience in patent law as a suitable person to get the bill put in such a shape that the committee could report it with a fair probability of having it become a law. I conferred with the attorney and he under-took to frame a bill to meet the case. On security in property is the foundation on

will agree with me that desperate remedies are needed, and that the welfare of the trade ought no longer to be sacrified on the altar of modesty. Let us hope that the time is not far distant when proper self-assertion, a confident and brilliant declaration of the trade ought no destruction. the Commissioner of Patents in regard to the bill, the commissioner agreeing that some remedy ought to be found for the evil complained of, but to get found for the evil complained of, but to get it in proper form seemed to be the great question. The fur-ther consideration of the bill was postponed in order to hear more fully from the Com-missioner of Patents. I attended the meetmissioner of ratents. I attended the meeting of the committee on April 5 and 12. The committee finally agreed upon a bill as a substitute for the original bill, a copy of which accompanies this report, marked "B," and the chairman was authorized to report it to the House with a favorable recommendation. Gov. Vance assured was be would ation. Gov. Vance assured me he would report it at the earliest opportunity, and en-

deavor to pass it through the House before the adjournment of this session.

The bill is not in just the shape that we desire, but I am anxious to get it through the House, even in its present shape, this session, and then we could have a chance of per-fecting it in the committee of the Sente et fecting it in the committee of the Senate the next session.

In closing this report we tender our grateful acknowledgments to our colleagues on the committee, who were prevented from going to Washington, but who rendered valuable assistance by correspondence. We have also to acknowledge valuable assistance from the president and secretary of the As-sociation, and from various members of the Association, who pressed the importance of the measure on the committee by letter. Respectfully submitted,

ISAAC A. SHEPPARD.
The following is the circular letter to the Chairman of the Committee on Patents, re-

ferred to in the above report:

To the Honorable Robert B. Vance, Chairman, and members of the Committee on Pat-ents of the House of Representatives: The undersigned, on behalf of the manufacturers undersigned, on behalf of the manufacturers of stoves in the United States, would respectfully ask your favorable consideration of bill H. R., No. 2022, entitled "A bill for the better security of property in patterns for metal castings," and desire to submit some of the reasons that have impelled them to ask for this legislation. In so doing it will be necessary to review briefly the past history of this branch of industry.

The manufacture of stoves for many years made but little advancement, owing to the

made but little advancement, owing to the fact that when a new stove pattern was made, and castings made from it, parties would take the article thus produced to cast from, and would make a business of duplicating from it. Hence for a long time such new patterns as were made were of the cheapest and most indifferent kind.

By degrees, however, in proportion as the patent laws and the laws providing for the registration of trade-marks afforded protection and encouragement, improvements be-came more rapid, to the great benefit of the came more rapid, to the great benefit of the community, a conspicuous illustration of the fact that it is wise and sound policy for a government to protect and to encourage those who give their time, their money and their brain to the production of such improvements as are for the general good.

The production of a new and improved stove involves no small amount of thought and study. It requires talent to invent, knowledge to construct and taste to adorn it. It must be fashioned into a form that will combine with utility the greatest possible at-

combine with utility the greatest possible at-tractiveness; for the advancement of our people in culture and in refinement of taste, daily demands a more careful, thoughtful and artistic ornamentation, the embellishments of as stove of the present day being often of the most elaborate kind. In the construction of every part of a modern stove watchful care is required. Each plate must be of suitable form and thickness, and so formed and fitted with entire freedom from mechanical defects as to stand the test of fire in practical use. The bearings and joints must be so fashioned as to endure the expansion be so fashioned as to endure the expansion and contraction incident to their use. Combined with all these, beauty of form and ornamentation are also required. To test the stove thoroughly demards weeks and months of trial by fire. Such are the essen-

tials of a modern stove.

To produce such an article requires a large outlay of money as well as expenditure of time and thought. Having produced it one would naturally suppose that the manufac-turer would reap the reward of this invest-ment of his capital and of his skill. Such, however, is not the case. Unprincipled persons shamefully seize upon his property, and no statute law exists that will adequately sociation requesting them to write promptly to certain members of the committee, and principles of common law in State courts is both tedious and oppressively expensive. To illustrate: An enterprising manufacturer has determined upon producing an improved cooking stove, of which, in order to meet the wants of various families, he must make four sizes. The first step in the process is the making the necessary drawings from which to make original wood patterns. He employs experienced pattern makers to construct the wood patterns and a skillful carver to ornament them. The cost of this work will be from \$2000 to \$3000. Some feature of the above is patentable under the law, and for that particular part or parts (a grate and some particular plate if you please) he takes out a patent. The design is taste-ful and the combination of its ornamentation is new, and for that he takes out a design patent. He gives it a name ("Cook's Fa-vorite," for example), and he registers a trade mark for that.

After all this painstaking and expense most persons would conclude that he had some property in his patterns, the value of which would depend upon the merit of the article produced; and if all men were honest such would be the case. But unfortun ately all men are not honest. Counterfeit Counterfeit ers, thieves and pickpockets infest civilized communities, and prey upon them; and un-principled men in like manner stand ready to avail themselves of what has cost the honest manufacturer time, thought and money, without giving an equivalent for it, and it is this fact that compels the stove manufactur-ers to ask for the passage of this bill as a measure of protection to them in their right-

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No. 27 North Fifth St.,

PHILADELPHIA, U. S. A.

return to our illustration: Our honest manufacturer has produced a new and improved cooking stove, and has registered as a trademark its name, "Cook's Favorite." He has patented the design, it being a novel combination of ornaments. He has made an improved grate and some other improved plates for it, on which he has been granted letters patent. He has also made an improved center piece, ingeniously constructed, the better to withstand the strain on that part of the stove on which he has received separof the stove on which he has received separate letters patent. The other parts of the stove, however, are not allowed to be patentstove, however, are not allowed to be patentable; for although entirely new and produced by great labor and expense, they do not differ in form and general appearance from similar parts of stoves previously made sufficiently to enable him to obtain a patent for them under existing laws. This stove is put upon the market. It is regarded stove is put upon the market. It is regarded with favor by the trade; it is sold and put into use; it meets all requirements, and it becomes known as a superior article. As such it may be expected to come into favor, and the manufacturer whose brain, capital and enterprise have broughther this new article of merchandise into existence has a prospect of receiving a suitable recompense for his outlay. But the manufacturer who

lacks the ability or the disposition to venture upon anything new sees the stove which has been thus produced. He covets it, and like the counterfeiter, the pickpocket or the pirate, he sets his wits to work to see how he can get possession of this property without giving any equivalent for it or having the law take hold upon him.

Observe carefully his method of procedure. He purchases, either in person or by proxy, from the dealer who has the stoves for sale,

one of each size, ostensibly for private use. He has them brought to his foundry and He has them brought to his foundry and taken apart. He cannot make the stove as a whole, because of the patents and trade mark; he therefore takes the various parts and files up the castings He takes off the name "Cook's Favorite" and puts on "Kitchen Companion," or some other name; thus he avoids the trade mark. He makes a grate that will fit the fire-box of the stove, but differing from the patented grate and but differing from the patented grate, and thus avoids the patent upon the grate. He makes a plain center piece and puts it on, and thus avoids that patent. He files off some of the small ornaments, and either leaves bare spaces or substitutes other ornaments for them, just sufficient to change or to destroy the design, and thus he avoids the to destroy the design, and thus he avoids the design patent. The remaining plates of the stoves he uses as patterns without alteration. The "pirate" thus secures, at an expense of a few dollars, a set of patterns, to produce which has cost the enterprising originator of the stove from \$2000 to \$3000 in convey heriday that the time and study sizes. money besides the time and study given He proceeds to cast stoves from the patterns thus obtained, and puts them upon the market in competition with the wares of the honest manufacturer whose expenditure has

originated them and whose capital is invested in them, and of course at a lower price; for it is generally true that stolen goods are sold for less money than goods honestly produced. The case stated is not an imaginary one, but it is taken as one out of many in our business experience, and we doubt not but that each of the principal and more enterprising manufacturers of the country can furnish many like instances. The same kind of piracy is committed to some extent in other branches of the manufacture of metal castings by parties who, as we have stated, take the castings of others and file them up for patterns, and after casting therefrom make merchandise of their product, but we know of no other branch of honest in-dustry that has suffered so much from this spe-cies of robbery as the manufacture of stoves.

When a man designs an article and makes, or pays for having made, a wooden pattern from which castings can be made, has he not a property right in that pattern? We think he in justice has, and we think that others should not be allowed to use it without compensation. He originates and produces at a should not be allowed to use it without com-pensation. He originates and produces at a heavy cost the original pattern. He makes castings from it and sells them for use as manufactured articles. His pattern repre-sents his investment of capital. We ask what possible right has another to take the product of his brain and money, put into property in that shape, to make other cast-ings from it, and to put the castings so made into competition with the wares of the party whose property has thus been stolen?

which the fabric of civilization is built. To return to our illustration: Our honest manufacturer has produced a new and improved cooking stove, and has registered as a trade-would probably be amendments made in the Senate, the natter of the fee could then be corrected. A fee of \$20 would, undoubtedly cover the patterns for an entire stove. The following is the bill:

Mr. Vance, from the Committe on Patents, reported the following bill as a substitute for H. R. 2022:

#### A Bill for the Security of Property in Metal tastings.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That any person or firm domilciled in the United person or firm domilciled in the United States, and any corporation created by the authority of the United States, or of any State or Territory thereof, who, by their own efforts or expense, have produced any original pattern for metal castings, and who desire to obtain for the manufacture of metal castings the exclusive use of such, may obtain protection therefor by complying with the following requirements:

First, by placing upon such patterns and castings 'ha word "registered," together with the date of such registration.

Second, by causing to be recorded in the Patent Office a statement specifying the names of the parties desiring the protection, their residence and place of business, together with a general description of the pattern to be registered, and duplicate photographs or drawings of such pattern.

tographs or drawings of such patterns.

Third, by making payment of the fee of \$20, in the same manner and for the same purpose as the fee required for patents.

Fourth, by complying with such regulations as may be prescribed by the Commis-

sioner of Patents Section 2. The statement prescribed by the Section 2. The statement prescribed by the preceding section, in order to create any right whatever in favor of the party filing it, must be accompanied by a written declaration, verified by the person by whom, or by some member of the firm or officer of the corporation by which, it is filed, to the effect that the party claiming protection for the pattern is the rightful owner thereof, and that the description and drawings truly represent the pattern.

Section 3. Copies of the certificate, and of the date of the receipt thereof, and of the statement and drawing filed therewith, under seal of the Patent Office, duly certified, shall be evidence in any suit in which such regis-

be evidence in any suit in which such regis-tered patterns shall be brought in controversy

Section 4. A certificate of registration as above prescribed shall remain in force for seventeen years from the date of such regis-tration. Such certificate, during the period that it remains in force, shall entitle the person, firm, or corporation registering the pattern to the exclusive use thereof, to this extent, that no other person shall lawfully use castings made from said patterns as patterns for the production of other castings.

Section 5. Any person who shall counter-feit or make a fac simile of any metal castfeit or make a fac simile of any metal castings so registered, or use such metal casting, either in whole or in part, as a pattern in molding, unless by the written consent of the owner of the original pattern from which the casting was made, shall be liable to an action on the case for damages for such wrongful use of such castings, at the suit of the owner of the pattern thereof, and the party aggrieved shall also have his remedy, according to the courts of equity, to enjoin the wrongful use of the casting made from his pattern, and to recover compensation the wrongful use of the casting made from his pattern, and to recover compensation therefor in any court having jurisdiction over the person guilty of such wrongful use: Provided, That this act shall not be construed to prevent the production of any article specially ordered or intended for the personal use of the party ordering or producing the same, and not intended or exposed for sale as merchandise.

exposed for sale as merchandise.

Section 6. The Commissioner of Patents is authorized to make rules and regulations and prescribe forms for the transfer of the right to the use of registered patterns, con-forming as nearly as practicable to the re-

orming as nearly as practicable to the requirements of law respecting the transfer and transmission of copyrights.

The report was accepted with thanks to Mr. Sheppard for his exertions in behalf of the Association before the Congressional committees, and the committee continued.

(To be continued.)

Ings from it, and to put the castings so made into competition with the wares of the party whose property has thus been stolen?

We appeal to you, in the interest of common honesty and fair dealing, to pass the bill in question, and thus prevent the unprincipled from appropriating the unrequited labor of the honest man to their own use without compensation. We fail to see that any valid objection can be made by an honest man to the provisions of this bill. It abridges no man's rights. It only restrains the wrong-doer.

We do not seek to prevent a man from making as many wooden patterns as he may please for articles or plates not patented, and we think the provise appended to the bill fully protects the public or the consumer from any hardship. The provise allows the farmer, the mechanic, or any citizen to take a casting and to produce a duplicate therefrom, or to procure the same to be produced for his own personal use. To this we make no objection.

We but desire a law to protect our honestly acquired property in patterns, and to restrain dishonest manufacturers from appropriating it to make merchandise thereof to the damage of the rightful owners of the property. We think that the law ought to recurre the damage of the rightful owners of the property. We think that the law ought to result the property of protection as shall empower a court of justice to apply a right and fitting remedy upon hearing and determining the cause of complaint of parties thus injured.

Indulging the hope of your favorable and speedy action on the bill, the above is respectfully submitted.

Chairman of Committee of the Stove Manufacturers' Association of the United States.

February 28, 1878.

On request, Mr. Sheppard read the House Bill as now constituted, and in reply to a question from Mr. T. F. Filley, stated that the tout one of the meeting must be a question from Mr. T. F. Filley, stated that the tout one of the meeting must be a question from Mr. T. F. Filley, stated that the tout one of the meeting must be the saving of money Economy in Ironmaking.-The question probably apply to each part of the pattern their intention to adopt the system at the of a casting. This would be amended, how-mills and forges they managed.

The New Oil Region in McKean County, Pa.

A correspondent of the Philadelphia Ledger, writing from Bradford, Pa., says:
Bradford is nearly the center of the new oil region, which is about 23 miles long and 13 miles wide, principally in McKean county. A portion of it, however, is in Cattaraugus county, New York, and from this point it extends east by southwest, through a broken country of ravines and hills, ranging from 500 to 800 feet high.

500 to 800 feet high.

The first discovery of oil was made by a Mr. Moses, just over the Pennsylvania line, at a place called Limestown, now a growing town, and in approaching Bradford from Buffalo the first derricks are seen at this point. The wells in this new territory numpoint. The wells in this new territory number at the present time about 1800, and new ones are being opened every day—in fact, so rapidly are they opened every day—in fact, so rapidly are they opened that the producers are becoming alarmed for fear that the supply will so far exceed the demand (which is the case now, in a measure) that the the case now, in a measure) that to own an oil well will mean loss of money, if not

bankruptcy. wells range from 1200 to 4500 feet These wells range from 1220 to \$500 2000 in depth, and are generally known as pumping wells, and yield, on an average, from 6 to 10 barrels daily, though some of them produce 50 or more barrels. The aggregate yield for the entire district is from 15,000 to 16,000 barrels per day, and the sales were made recently at \$1.10 per barrel. The territory is so abundant in oil that but few dry wells have yet been found to dishearten the wells have yet been found to dishearten the borer; and so easily are the flowing or pumping wells operated, that one man attends to a half dozen of them, so thick are they in some places. The oil is shipped in iron tank cars, the oil from the tanks at the various wells being conveyed through a network of pipes to large receiving tanks on the line of the railroads. These tanks, which held from 10.000 to 25.000 harrels. which hold from 10,000 to 25,000 barrels, are at Olean, Carrollton and Salamanca. The one at Olean is connected with the Buf-Tale one at Olean is connected with the Buffalo, New York and Philadelphia road; at Carrollton with the Erie, and at Salamanca with the New York Central. The oil flows into these tanks from the numerous wells, and by force pumps at these stations into the tank cars. It is said that this section is susceptible of much greater increase in production, but those having wells here, as well as in the old oil region, are making efforts to prevent the opening of new wells, and keeping down the production, even from the present wells, until prices advance. The opinion wells, until prices advance. The opinion seems to prevail very generally that unless this is done many persons, and particularly those who have operated on borrowed capital, will be in the hands of the sheriff. capital, will be in the hands of the sheriff. The production in the entire oil region is estimated at about 40,000 barrels daily, while the sale or demand does not exceed 25,000 barrels. Two years ago oil sold here at about \$3.50 per barrel, and it has gradually declined to the present price, and is likely to be still lower. In fact to-day the parties controlling the central tanks refused to receive or buy any more at present and to receive or buy any more at present, and all sales have been stopped at individual

The best view to be had of the oil develop-ment in the section after leaving Bradford is to pass over the Olean, Bradford and is to pass over the Olean, Bradford and Warren Narrow Gauge Railroad, recently opened to travel, to Olean. Passing up the Tuna Valley and Foster's Brook hundreds of derricks are in sight and towns are springing up like magic all along the line of the road. The first place reached after leaving Bradford is "Tarport." Here there are large tanks and powerful pumps for forcing the oil to the receiving stations through pipes which lie on the surface and can be seen all through the section. en all through the section.

Above this place are Derrick City, Gil-more and Red Rock, all within two miles, and each rapidly spreading; and though these towns were only commenced late last year they now contain quite a large population. In fact at Red Rock many of the buildings are rather better than is usually found in a new country like this, most of it being wild and rugged in the extreme. The narrow gauge passes these towns on one side of the mountain until Red Rock is reached, when it makes a short curve and reached, when it makes a short curve and climbs the opposite side with a grade of 175 feet to the mile, and opening up a fine view of the valley almost to Bradford. It then follows four-mile and two-mile run, cropping into New York State, 10 miles from Bradford and 13 miles from Olean, on the Allacheny River. The oil wells are to be Allegheny River. The oil wells are to be found along the side of the two runs mentioned, but soon after passing the State line

How to Study Science.-Prof. F. W. Clarke has an article in the Popular Science Monthly for June, in which allusion is made to the true method of studying science student of science should meet Nature at first hand, and learn to observe her phenomena for himself. Lectures and text phenomena for himself. Lectures and text-books are but minor accessories to study; in science they play a wholly subordinate part; in the laboratory, the field and the museum, the chief work is to be done. No matter what branch of science is to be pursued, the sudent from the very first must meet it face to face. The biological sciences ought to be studied in the field, collecting, in the museum, classifying; in laboratory, with the microscope and the scalpel. Far too often is the study of natural history degraded into a mere memorizing of classifications; as if the transitory part of the science were more valuable than the permanent! The student must see, handle and investigate for himself. He is to study the phenomena of life, and not merely the external appearance of a lot of stuffed specimens. Chemistry, and physics also, is to be studied chiefly in the laboratory. It is not enough for a student to see experiments, he must perform them. Thus only can he learn the true scope of these great sciences. By a proper drill in qualitative analysis he learns to observe closely, and to reason from his facts to their interpretation. Quantitative analysis pives him accuracy of manipulation, and an insight into the absolute value of experiments, he must be strictly correct rendering of Technical Expressions in matters relating to Machinery, Metallurgy, \*13 draulics, &c. The very best reference will be furnished from leading manufacturers in this city, Philadelphia and elsewhere, for whom he has translated. If desired, estimates will be procured for the setting up, electrotyping and printing of catalogues, &c., in the above lander of the setting up, electrotyping and printing of catalogues, &c., in the above lander of the setting up, electrotyping and printing of catalogues, &c., in the above lander of the setting up, electrotyping and printing of catalogues, ac., in the above lander of the setting up, electrotyping and that he bestows special attention upon a strictly correct rendering of Technical Expressions in matters relating to Machinery, detailurgy, \*13 draulics, &c. The very best reference will be furnished from leading manufacturers in this city. Plantelliurgy, \*13 draulics, &c. The very best reference will be furnished from leading to Machinery. an insight into the absolute value of experiment. This insight also results from delicate practice with instruments of precision in physics; a kind of exercise of the

very highest educational value. If the of study in any science can course of study in any science can be capped by an original reseach leading to the discovery of new facts, so much the better. In a German university the canbetter. didate for a doctor's degree in science is absolutely required to carry out such a research, and to submit a dissertation upon it This is not a severe requirement—every student who has been decently trained is able to come up to it, all the popular notions about the mysteriousness of scientific research to the contary notwithstanding. Why should we not aim to equal the German

The law of checks was plainly defined by Judge Thayer, of Philadelphia, in a recent charge to a jury. He held that before the indorser of a check could be held for it, it must be shown that the receiver had pre-sented it to the bank on the day of its recep tion, before the close of banking hours on the following day, when, if dishonored, notice must be given thereof to the indorser, which makes him liable for the same. But if the holder of a check thus given neglects to present it for payment until after the second day of its acceptance, and it is then dishonored, the inderser is not liable for it, and the loss, if any, falls on the

#### Special Notices.

#### SPECIAL NOTICE.

The undersigned offer their services as agents t American Producers of Metals. They represent foreign brands of Zine, Russia Iron, Hoop Iron, Window

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#### Iron and Heavy Hardware House.

MILWAUKEE, WIS.

Owing to the removal to the Works of our resident partner, Mr. T. M. Jones, we will sell the stock, good will and fixtures of the Iron and Heavy Hardware Business now conducted at Milwaukee, Wis., as a branch of the American Iron Works, Pittsburgh. The business is well established, and the stock of iron, nails and heavy hardware is of the best quality, having been manufactured at our works and selected with the greatest care for the trade. This affords an excellent opportunity for any parties desiring to engage in a thoroughly organized and prosperous business in a favorable locality.

locality.

Our Branch House will be continued as heretofore at No 190 to 196 South Canal street, Chicago.

Applications may be made to us at Pittsburgh,
Chicago or Milwaukee. JONES & LAUGHLINS.

### Second-Hand Machinery.

One 14 in.x30 in. Whitehill & Smith Adj. Cut-off Engine, Wheel 10 ft. diam., and
One 54 in.x16 ft. Tub'r Boiler for same; both almost

One 54 in.xi6 ft. Tub'r Boller for same; both almost new.
One 10 in.xi2 in. Flakkill Landing Engine, and
One 48 in.xi4 ft. Tub'r Boller for same.
One 10 in.xi2 in. Harris Corliss Engine, with Boller,
Pump and Heater, never run, price very low.
One 26 in.xi7/6 ft. Engine Lathe, Rod and Cross Feed.
One 22 in.xi6 ft. Engine Lathe, Pond; all improvements.
Two 15 in. Pratt & Whitney Engine Lathes,
with Taper Attachment. One Lincoln Gear Cutter,
nearly new. Two Lincoln Milling Machines. Four
Brainard Milling Machines. One each 1, 2, 3 and 4spindle Drills, Pratt & Whitney. One No. 6 Root
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Rare chance to purchase stock of a well-established business in central Illinois. Stock will in voice about \$6,000. The best of reasons given for selling. Address "HARDWARE," Office of The Iron Age, 83 Reade St., N. Y.

#### DROP FORGINGS

The TRENTON VISE & TOOL WORKS, Trenton N. J., having increased their facilities, are now able to do all kinds of

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A YOUNG MAN HAVING FIVE YEARS' EXperience in wholesale Hardware, wishes a situation as traveling Salesman. Good reference.
Address
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A WELL-KNOWN IMPORTING HOUSE (EStablished in 1854) desires a partner, special or general, with \$25,000 to \$50,000. Please to address
Office of The Iron Age. 83 Reade St., N. Y.

Will the maker of the machines which produce the American Hob or Shoe Nails communicate

I. & E. ISON,

Ashby de la Zouch, England,

and with prices and particulars of the machines also send mail samples of the nails made.

WANTED by an experienced man a position as stock clerk, buyer or traveler for whole sale house or manufactory. Address, A. C., Office of The Iron Aye, 83 Reade St., N. Y.

#### SPECIAL NOTICE.

The undersigned, in view of the Paris Ex-hibition of 1878, begs to inform his friends that he continues to make translations of Catalogues, Prices-current, Circulars, Correspondence, &c., from and into the

ENGLISH,

PRENCH, GERMAN

and SPANISH, whom he had will be procured for the setting up, escaped and printing of catalogues, &c., in the above C. KIRCHHOFF,

Metal Reporter of The Iron Age, 83 Reade St., New York.

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This Book contains 1500 tables for single and This Book contains 1500 tables for single and combination discounts, such as 171% \$, 45, 15, 105/16, 15, 155/5, 256/16, 15/5, 25/65/63, 35/65/63, 35/65/63, 45/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610, 15/65/610

(A copy can be examined in "The Iron Age" Exhibit at the Paris Exposition). **OPINIONS** 

Mr. S. H. Jennings: Dear Sin.—Please let us know if we can procure "Jennings's Combination Discount Tables" in any city near here. We wish to examine is provious to purchasing. If you would like to send it C. O. D., you paying charges, with privilege of examination before taking, you may send one. Yours truly,

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Mr. S. H. Jennings: Dear Sir.—Your Book received by mail. We like the Tables very much. Enclosed find three dollars. Please acknowledge receipt. Yours truly TERSTEGGE, GOHMANN & CO.

Nicmols, Tioga Co., N. Y., May o, 1878. I am very much pleased with the Tables. They are a great saving of time and labor, and I take pleasure in recommending them to others. ALEXANDER A. SWINTON.

ROCKFORD, I.L., May 20, 1878.

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naces, tools, &c. E. L. MOTTE,

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Large Punch and Shears, 12,000 lbs., will punch 42 in to center; two small Punches and shears; 1524/s feel Planer; Lathee, Drills and Machinists' Tools of all sizes; a large lot of Architectural fromwork Tools Wood-working Machinery; Tanks of all sizes; Hydraulic Presses; Steam Engines and Bollers of any size, from 5 to 500 hors power, and Pumps of all sizes and makes at less than one-half cost and as good as new.

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CITUATION WANTED—AS BOOKKEEPER OF Traveling Salesman. Have had nine years' experience in the above positions in the Hardware Business A reference furnished. Am not afraid to work and willing to make myself useful. No objection to going to any piace offering a permanent situation. Office of The Iron Age, 230 South 4th St., Phila., Pa

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With a net profit of \$7 per cord of wood, can be obtained by using the new apparatus patented in the United States, France, &c. The sawings effected by this process amount to enough in one year's time to pay for all necessary material required to carry on the operation. The patentee has had 17 years' experience and can give sood references.

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#### Wanted,

on July 1st, by a foreign Hardware and Cutlery House, a traveler to travel in South and Southwest on commission. Address, with references.
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# W. GARNER,

# General Merchant,

Mouldsworth, near Chester, England, Supplies nearly every class of Goods,

including all kinds of

#### Agricultural Machinery, Domestic Machines, SEWING MACHINES

And Artificial Manures.

W. GARNER is open to represent any Foreign Manufacturers in England for the sale of their manufactures of whatever nature or kind. Have ing a wide and well established connection in the man and French products to mutual advantage.

W. Garner is also open to buy any kind of Goods on commission, and ship them to any part of the world. Manufacturers or others desiring his as sistance will please address (with full particulars in English) as above.

#### To Manufacturers and Jobbers of Hardware, Cutlery, &c.

Manufacturers and Jobbers, having surplus stocks or goods that from any cause are unsale able upon which they wish to realize, or assignees who have stocks to dispose of, will find a cash purchaser by communicating with.

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Job and Auction Lots of Hardware, Cutlery, &c., 102 Chambers St., New York.

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AMERICAN HARDWARE CO., AUSTRALIA,

Solicit correspondence with American manufac-turers desirous of representation in the Australian Colonies. Consignments will have prompt atten-tion. References furnished.

#### For Sale, To Let or Exchange

For other Property (Western preferred),

Stock or Interest in an estab-

lished Business, On very reasonable terms, one of the finest pieces of property in the country for Foundry or general Manufacturing purposes, and consists of the following substantial brick buildings, situated corner Vail Ave. and North St., Troy, N. Y., viz., Moulding room, 132X74 ft., with large three-story building attached, 174X52 ft. The distance between floors and ceilings on each story is respectively 14, 12 and 10 ft., and are now used as mounting, store, sample and office rooms. Attached also is a two-story building, 90x45 ft., with engine and boiler rooms. On same grounds are sheds, barns and large yard. Attached to the property also are engine and boiler, main lines of shafting, elevators, &c. The property fronts on three streets. It will be sold, rented or exchanged, in part or together, and at very low price. Address

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Or W. H. HOLLISTER, JE., Troy, N. Y.

WANTED,—A SITUATION AS TRAVELING Salesman in the Iron, Steel or Metal trade. Have an extensive acquaintance with manfacturers, machinists, &c., throughout the United States. Can give first-class references, having had nine years' experience as salesman. Salary expected moderate. Address A.F. W., 281 Erie St., Cleveland, O.

#### HALSEY & MILLET,

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Solicit from manufacturers, importers and jobbers consignments of Hardware, Cutlery, House Furnishing Goods, &c. &c., for their regular weekly sales.

JAMES E. HALSEY, Cornerly of J. E. Halsey & Co. Blaseki, Welles & Millet.

#### The Sherman Process Co.

9 Pemberton Square, Boston, Mass., Issue Licenses to use the Process for the Manufacture of Iron and Steel

In the Bessemer Converter, Crucible, Siemer Martin, Puddling, Blast and Cupola Furnaces. The use of this Process improves the quality of the product, saves fuel and labor, and does not re-quire any change in furnace or manner of working. See page 17 of The Iron Age of Oct. 25th, 1377.

#### Bissell & Welles.

Wholesale Hardware Auctioneers, No. 15 Murray St., New York.

Sales held weekly for the trade. Consignments olicited. We refer to the leading Manufacturers

#### For Sale.

A well-selected stock of Hardware, in one of the most thriving county seats in Ohio. Stock all first-class, and in splondid order. Stock not large, but very com-plete. This is a rare opportunity. Terms easy. For particulars, &c., address. No. 439 Superior St., CLEVELAND, OHIO.

#### Wanted—A Partner,

in a foundry and machine business, already well established. Locality splendid and healthy, A practical man with means is wanted to join practical man who is already well established. CAR WHEEL FOUNDRY, P. O. Rox 134, Selma, Alabama

#### WANTED,

Controlling Agencies for saleable articles of Hardware manufacture, suitable for home consumption or export.

HOYD & CHASE,
Manufacturers of Oil Stones, 107th St., N. Y.

WANTED.-A first-class business man famil-iar with machinery and manufacturing, capa-V iar with machinery and manufacturing, capable of handling large bodies of men, desires a responsible position. References satisfactory. Address,

IRON AND STEEL Care of P. O. Box 813, Bridgeport, Conn.

#### NOW READY.

THE

For July.

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PROCESS.
BLOW-HOLES IN WROUGHT IRON.

The above summary of the contents of the July number of The Metallurgical Review shows that its contributions are varied in character and of immediate practical importance.

Phosphorus determinations, the value of which is being daily more universally recognized, are by no means uniformly excellent or reliable, so that faith in their results becomes complete only when they are indorsed by the name of some prominent chemist. The reason for this uncertainty and lack of confidence is, to a certain extent, due to the circumstance that the methods employed are very numerous and demand high skill and conscientious work. The fact that these methods are by no means perfect has induced a large number of chemists to make individual researches, the fruits of a series of which are presented to the metallurgical professions by Messrs. Alfred E. Hunt, S. B., and Samuel Peters, whose work and the results to which it has led deserve

careful investigation. The third installment of Alex. L. Holley's valuable paper on the "Terrenoire Process of Making Steel" lucidly and simply states the chemical theory of the process, and gives some valuable practical data about molds, annealing and the uses of solid steel castings. The subject of the paper has attracted a large share of the attention of metallurgists recently, and it bids fair to be one of the revolutionary progressive movements marking the beginning of a new departure in the application

of steel to many engineering purposes. Professor T. Egleston, in the third and last installment of his paper on "Copper Dressing in Lake continues his a the construction, the work and the capacity of the dressing apparatus used in that region, which are in many respects unique.

Professor Anton Von Kerpely's description of the occurrence of liquid cyanides in a Hungarian blast furnace was translated for The Metallurgical Review from a manuscript copy of the proceedings of the Academy of Sciences, before which it was read. Although cyanides have been observed, even in large quantities, repeatedly, their nature has never been so carefully examined, nor were the conditions connected with their appearance so minutely noted as in this case. These are facts which give the paper great importance, as it is only by a thorough research of all phenomena connected with the blast furnace that its working can be clearly understood and corrective measures be taken accordingly

Cleaning and sorting machinery, drums, screens &c., form the topics of this month's installment of E. F. Althan's paper on coal and ore dressing-the most detailed and, theoretically as well as practically, exhaustive treatise on the subject as yet offered to English-speaking metallurgists.

The growing interest attached to lixiviation proesses for the extraction of copper will render the second portion of the detailed chemical examination of the English chlorination process welcome to our readers.

Some novel principles are advanced by Mr. F. C. G. Mueller on the chemical reactions of the Besse mer process, which, together with a number of smaller notes, conclude July's issue of The Metallurgical Review.

# Trade Report.

The past week has been comparatively uneventful in financial circles. The money market is easy, with rates at 2 @ 21/2 % on call. The rate of discount on prime business paper is 3 @ 4 %.

The gold market has been without fluctuations of sufficient importance to tabulate. The average quotations of gold is 100 % Silver in London is worth 523/d., which gives the 412 1/2-grain silver dollar a bullion value here of \$0.8894 in gold.

The bond market is active for governments, which is due to the present ease of the money market and to the fact that after the July interest disbursements it will probably become still easier. There is a fair demand for other investment securities, including desirable railroad mortgages. We give below the closing quotations of governments.

The stock market has been irregular, but generally active, with principal dealings in Lake Shore, Western Union, D. L. & W., St. Paul, Pacific Mail and Northwestern. We give below the closing quotations of ac tive shares.

The changes in the bank averages during

the week were as follows:	
LoansII	
SpecieD	ec. 2,035.5
Legal tendersII	nc., 2,964,0
Deposits	
CirculationD	HC. 75,0

These changes increase the surplus reserve \$1,028,725.

The foreign trade movements for the week are shown in the following tables:

#### For week ended June 22:

Total for week. \$4,492,551 \$6,184,258 \$5,892,128
Prev. reported. 149,056,336 156,785,389 133,477,460 Since Jan. 1.... \$153,498,947 \$162,964,647 \$139,369,588 Included in the imports of general merchandise were articles valued as follows:

	Quantity.	Value.
Anvils	252	\$2,150
Brass goods		166
Bronzes	6	764
Copper		302
Cullery		15,080
Guns		0.100
Hardware		SOI
Iron, pig, tons	200	2,876
Iron, sheet, tons		1,146
Iron ore, tons	46x	10,030
Metal goods	77	8,720
Nails		1,065
Needles		2,004
Old Metal		261
Platina		4.750
Plated ware		91/39
Per. caps		1,003
Saddlery		1,479
Steel		11,000
Spelter		- 199
Silverware		*,299
Tin, bxs		383
Tin, slabs		69,401
Wire	-	216
EXPORTS, EXCLUSIVE OF	SPECIE.	

For week ended June 25: For the week... \$6,674,504 \$5,711,039 \$5,851,520 Prev. reported.. 115,121,113 123,795,264 158,438,026 Since Jan, 1....\$121,795,617 \$129,506,293 \$164,289,546 EXPORTS OF SPECIE.

For week ended June 22: Total for the week..... Total since Jan. 1, 1878... Same time in 1875.
Same time in 1876.
Same time in 1876.
Same time in 1874.
Same time in 1873.
Same time in 1873. Government bonds close as Bid. Asked

10-40 Teg. 10-40 reg. 10-40 coupon. 15'8 1881 registered. 15'8 1891 coupon. 15'8 1891 coupon. 15'8 1891 coupon. 18' 1997 registered. 18' 1997 coupon. The following were the closing quotations

Atlantic and Pacific Telegraph. Chicago and Northwest Chicago and Northwest.

Pref.
Chicago, Rock Island and Pacific Chicago, Bur. and Quincy.
Col., Chicago and Ind. Central.
Clev. Col., Cin. and Ind.
Cleveland and Pittsburgh.
Chicago and Alton. Clev.. Col., Cin. and Ind Cleveland and Pittsburg Chicago and Alton..... Pref.. Delaware, Lack. and Wo Delaware and Hudson ( 5834 5654 4734 4734 9334 1534 38 -American.... United States.... Wells, Fargo & Co Harlem... Hannibal and St. Joseph.... Pref. Illinois Central.

Kansas Pacific.

Kansas and Texas.

Lake Shore.

Michigan Central.

Morris and Essex.

Miwaukee and St. Paul.

New York Central.

Pref. 83%

#### Union Pacific..... Western Union Telegraph. GENERAL HARDWARE.

nama...tsburgh and Fort Wayne...... Louis Kansas City Northern.....

New York Central. New Jersey Central

Pacific Mail .....

New Jersey Central .... New Jersey Southern .... Ohio and Mississippi .....

Toledo, Wahash and Western

The dullness incident to midsummer is the prevailing feature of the Hardware market, and there is absolutely nothing of an interesting nature to report.

The demand for Nails is light, and the

viously noticed. We quote 10d. to 60d., \$2.30, net, which price could be shaded for a large order.

Fernald & Sise have been appointed agent for the Metal Stamping and Enameling Co. of St. Louis, Mo. They will carry a full line of their Stone Ironware in stock at their warehouse, No. 100 Chambers street.

The Penfield Block Works, Lockport, N Y., are now prepared to furnish their style F" Blocks for farmers' use in sizes 8, 9 and 10 inch, with either lignumvitæ or iron Sheaves, plain or all-steel Roller, bushed. H. B. Newhall, No. 11 Warren street, is their agent in this city.

Hamilton & Matthews, Rochester, N. Y. illustrate, in their advertisement on the 26th page, Fowler's Patent Improved Tumbler Fly Trap, which they claim is not only the cheapest, but the surest fly catcher in the market. It is a marvel of cheapness, being offered to the trade at 75 cents per dozen without tumblers; in lots of one gross this price is subject to discount 20 per cent.

Leonard Bailey & Co., Hartford, Conn. have placed on the market a new Circular Plane, which is illustrated and fully described in their advertisement on page 26.

We print below some communication which we have received on the subject of the proposed auction sale of Screws: VERMONT, June 17, 1878.
To the Editor of the Iron Age—DEAR SIR

I noticed the communication in your issue of the 6th, in relation to sale at auction of the oth, in relation to sale at auction of Screws by the American Screw Company. I have read with care your editorial in same issue, also correspondence published on the 13th. Allow me to criticise for one moment. In the correspondence you publish with your own opinion the dominant idea seems your own opinion the dominant idea seems to be that somebody will lose some money. Who? Not the consumer, for he only buys as he wants. Not the country merchant, for his stock is so small that any further decline in value would possibly amount to nothing. Then it must be the jobber. Very good. We can all do without that class of Hardware men. So let them stand from under Hardware men, so let them stand from under. Again, your correspondents think it impossible to increase the consumption of Screws. Such a proposition can only be compared to the ruinous policy of the trades unions of Great Britain in allowing only a limited number of young men to learn a particular trade for fear of causing a surplus of that especial branch of labor. This fact, together with its ruinous results to the laborer, the manu-facturer and the nation as a whole, is so

The proposition to take this surplus stock abroad and sell it in foreign markets looks still further to the protection of your correspondents, who seem to forget that such an experiment, while it would be very expensive to the parties attempting it, might prove to be a failure which would it, might prove to be a failure which would react to the injury of not only the article offered, but to kindred goods of American make. It is reasonable to suppose that the sale, if it occurs, will be duly advertised. In view of the fact that Americans have in the past and do at present go abroad to buy merchandise suited to the wants of our country, it is reasonable to suppose that representatives of other nations may come here to sentatives of other nations may come here to buy; and it seems to me that it would be much better for the American manufacturers if they could induce representatives of for-eign trade to come here than for us to take goods abroad for sale. It cannot be a ques-tion but what it would reduce cost alike to purchaser and consumer. You may say we are too young as exporters to attempt that. It is a question admitting of much doubt. Again, if we always take our products

well known that explanation is needless.

abroad we must always so continue.

Can a corporation or company be found in the Union better fitted to invite representatives of foreign trade to come here and look for merchandise than the American Screw Company? Would not such a sale as Screw Company? Would not such a sale as they contemplate attract more hardware men from abroad than anything yet done? Finally, while the proposition of the American Screw Company to offer for sale at auction so large a quantity of Screws (as they undoubtedly will) is a novel idea, it is one eminently worthy to originate with such able men as manage the affairs of that corporation. And if the idea is carried out there can be but one result, and that beneficial alike to the manufacturers, the dealer and the consumer, not only in relation to and the consumer, not only in relation to this particular item, but to the manufacturers of all kinds of merchandise produced in this country suited to the wants of other \$22.75. GREEN MOUNTAIN BOY. nations.

PHILADELPHIA, June 24, 1878. To the Editor of The Iron Age-Dear Sir: My opinion in relation to the proposed sale of the surplus stock of Screws by the American Screw Company is, that should the company deem it advisable to make a sale of their surplus stock any time previous to commencement of the fall trade—say 1st August next—it would be entirely satisfactory to a majority of the Hardware trade provided the company would make an absolute sale of, say 300 to 500 cases in 5-case lots and upward, the balance to be with drawn if prices realized are not satisfactory to the company. I hope to see the time when manufacturers of Hardware will carry

NEW YORK, June 22, 1878. To the Editor of The Iron Age.—In your issue of June 20 (page 21), under the head of General Hardware, you make a quotation from a letter sent you by the American Screw Company which shows that, on one subject at least, the writer speaks without knowledge of the facts. Alluding to the proposed auction sale of Screws, the writer says: "We have a precedent for all this in the history of the coal companies, where the overproduction is very like that among the Screw companies. It is well known that some years ago the Scranton Coal Company inaugurated a system of public sales, con-trary to the wishes of the other companies and against the judgment of the buyers, but to-day it is the chosen method of distribution adopted by the combined coal companies, tone of the market in the matter of prices and, contrary to all expectations, fully continues in the same week condition pre-

about the coal trade as he does about screw manufacture, he would not have been so ready to pass opinion upon the advantages and popularity of coal trade auctions. These auctions began years ago by the sale of Scranton coal by the Delaware, Lackawanna and Western Company. It grew out of a general fight among producers, and was in-tended to demoralize the trade. When the great combination broke two years ago the coal market was utterly demoralized. Nobody knew what it was worth, and the only apparent way out of the difficulty was to have recourse to sales at auction. There were at that time a few sales in which several of the large companies participated. The Pennsylvania Coal Company was the only corporation which repeated the experiment, the others becoming heartily sick of it. The Pennsylvania Co. held, I believe, three or four sales, and then returned to the old method with the others. At the present time the D. L. and W. Company is the only one which adheres to this method of sale. Its only advantage, even to them, seems to be that it gives them considerable cash in the early part of the month, as they demand an advance of 50 cents a ton on all purchases. Its disadvantages are that it forces coal upon the market regardless of the demand, which prevents that healthy relation between production and consumption which is necessary to a normal activity. If it had any conspicuous advantages the other companies would unquestionably adopt it.

Among the trade at large these sales are unpopular and are regarded as productive of demoralization. In the first place they publish the price to every one. They do not attract buyers to any large extent. The amount sold is always small compared to the supply but the recovery to compare the productive supply. supply, but the 50,000 or 100,000 tons sold makes the price for the whole production of There are always some buyers the month. in attendance to bid, but the greater number stay away, as those who desire assurances from other companies that they can purchase at the average prices of the sale, can generally get them. The only exception to this is found in the case of a rising market.

An auction sale always exaggerates the tendencies of trade. If the market is weak and prices declining the bids are likely to go very low; if, on the other hand, the tradence of the trade of the tr likely to go very low; if, on the other hand, the tendency of prices is upward, the bids are likely to lead the advance and cause serious fluctuations. In a word, an auction sale is a one-sided bargain, in which the buyer makes his own price and the seller has no recourse but to make good his offers. Again, it tends to place all buyers in a common line. The small dealer who wants 100 tons has the same advantage as the large dealer or consame advantage as the large dealer or consumer who wants 10,000. If he gets his bid sumer who wants 10,000. If he gets his bid in, he makes the price for the man who buys

in one lot more than he buys in a year.

These are some of the reasons why the trade at large do not like the coal auctions. Another is that it crowds the whole business of the month into a few days. The trade is ordinarily completely demoralized for a week before, and from three to four days after the auctions. At the present time, when advances are announced each month by the combination, nearly all the business is crowded into the latter part of each month. If the American Screw Company think these sales are favorably re-garded by the trade they must have got their information from the auctioneers. Respectfully,

#### IRON.

American Pig.-There is not a particle of improvement to notice in the condition of the Iron market. The sales during the week are few in number, and for small quantities. We hear of some inquiry for favorite Lehigh brands, but at prices which are positively declined by the makers. The only sale of any consequence that we hear of is 500 tons No. 2 X Crane at \$16.50, delivered at purchasers' dock in New York; terms four months, with interest. This price is equivalent to a trifle less than \$14.50 at the works. We are informed that the Thomas Iron Co. have blown out one of their furnaces since our last writing. We quote as before : Foundry No. 1, \$16.50 @ \$18; Foundry No. 2, \$15.50 @ \$17; Gray Forge, \$14.50

We repeat former quotations, viz.: Glengar-rency, but we have seen letters from S

Rails.—No sales either of Steel or Iron plated, makers being tired of losing 1/4 Rails are reported since our last writing, and we continue to quote Steel at mill, \$43 @ \$44, and Iron, according to quality, terms, &c., \$32 @ \$36.

price here.

Serap.-We quote No. 1 Wrought from yard, \$20 @ \$21.

#### METALS.

Copper.-Sales for the week under review have not exceeded 150,000 lb Lake Superior, at 161/8¢ and subsequently at 161/4¢. Baltimore we quote 161/2¢, nominally. The Lonmore we quote 161/2¢, nominally. The London market is again 10/ lower, the cable quoting Best Selected, at London, £69 @ Nickel—Is stee £69. 10/, and Chili Bars, £63 @ £63. 10/. Mail advices have reached us from the same quarter dated June 15, and reading as follows: "Prices have been quoted slightly lower, but there has been no business of any importance to be obtained, and sellers will probably have to make further conversions. probably have to make further concessions, for buyers must be satisfied of their require-ment: before prices advance, and being supments before precess at a transcription plied it is not likely that they will pay more than they did before, if as much, and there is no occasion for them to do so, the market being extremely inactive, and largely increased the volume of business, prices derive no strength from the demand; The auction sale yesterday was marked by a reither are stocks diminished, but quite the contrary—heavier than for many years past."

The combination prices for Manufactured. Copper are continued without change. Only an occasional inquiry for English Yellow Sheathing Metal, and the quotation is nominally 13½¢, currency, in bond. Amer-

If the writer of the above knew as much ican is very irregular, the price varying from 14¢ to 20¢, according to circumstances, the inside price only where English comes in direct competition. We quote: New stances, the inside price only where English comes in direct competition. We quote: New Sheathing Copper 26¢; Braziers, 28¢, and Bolts, 28¢; American Yellow Sheathing Metal, 18¢ @ 20¢; Yellow Metal Bolts, 25¢, and English Yellow Sheathing Metal, 14¢,

currency, in bond.

Tlu.—The market remains as quiet as ever, and we have no important sales to report. Arrivals during the week sum up ever, and we have no important sales to report. Arrivals during the week sum up 1119 slabs Straits. We quote: Straits, 143%; English Refined, 141%; ditto Common, 14\$, and Banca, 173%; all gold, large lines. Offers of 14\$, gold, are solicited for Straits Tin to arrive. London cables Straits, £62. 10%, and Singapore has declined to \$18.25 per picul. We are in receipt of details from Australia, dated Melbourne, April 15, and reading as follows: "Great discoveries are reported at Mount Heamskirk, on the the West Coast of Tasmania. The

coveries are reported at Mount Heamskirk, on the the West Coast of Tasmania. The wash dirt at five feet was not bottomed. Nuggets of splendid Tin were obtained weighing two pounds. The discoverers expect to trace the lode in the mountain. It is expected that this discovery will rival that of Mount Bischoff." Tin Plates have been quiet. The cable reports an irregular market in England. We quote at the close, ordinary brands, large loss gold. It have as follows: Charcoal irregular market in England. We quote at the close, ordinary brands, large lots, gold, \$\frac{1}{2}\text{ box, as follows: Charcoal Bright, \$\frac{1}{2}\text{ box, and ditto Ternes, \$\frac{1}{2}\text{ 4.87}\text{ Mail advices have reached us from Liverpool to the 13th inst. The export of Tin Plates from England to the United States during the first five months of the current year has been 41,992 tons, against 43,037 in 1877 and 36,109 in 1876; to Canada, 2067, against 3000 and 1816. These statistics are accompanied by the following remarks: "The buying when the low prices are taken is decidedly vigorous, and this indicates more faith in the future on the part of buyers than they have shown for some of buyers than they have shown for some

Lead,-A sharp advance has occurred Early in the week there were some order to the extent of 400 to 500 tons at 3.20¢ currency, which remained unfilled. Soon after limits were raised and sales effected to the extent of 250 tons at 31/4¢, currency followed by some small sales at 3.35¢, cur rency, when orders began to drop in for large lots at 33%, currency; but even a this advance they could not be had. To-day sales have taken place at  $3\frac{1}{2}\phi$ , currency, of such small lots as could be bought, orders for more remaining unfilled. The movement seems to be simultaneous here and a St. Louis, holders there having withdrawn from the market altogether. They write from England under date June 13: "Little has been doing on which to base exact low has been doing on which to base exact low-est prices, and the following figures could, without doubt, be substantially shaded for contracts of any consider-able extent. Spanish Pig, £16. 5/; Eng-lish Pig, £16. 15/, and Sheets, £17. 10/." Cablegrams are to hand to-day quoting Eng-lish Pig £17. 5/ @ £17. 10/ at London. This is an important improvement, and seems to indicate that peace will do Lead a great deal indicate that peace will do Lead a great deal more good than war could possibly have done it. Lead having declined more than any other metal in both hemispheres during the past twelve-month, it is, under a revival in trade in Europe and America, such as seems to be drawing near, most logically capable of a sudden and material rebound, and this recovery seems to be inaugurated now, is holders will but have confidence in their own property, and not be frightened by imagin ary abundance. Manufactured is in fair request at the combination rates, which are unchanged. We quote: Bar,  $4\frac{1}{2}$ ; Pipe, 5¢; Sheet, 6¢; Tin-lined Pipe, 15¢; No. 1 Solder,  $8\frac{1}{2}$ ¢; all less 10  $\xi$  to the trade.

Spelter and Zinc .- From the moment durable peace seems to be in prospect people in Europe begin to turn their atten-tion to metals deserving support by reason tion to metals deserving support by reason of uncalled-for depression, and next to Lead, Spelter has been the most downtrodden, hence the great speculative purchases that have been made for German, French and English account at Breslau of 24,000 cwts. "Godulla" at 16.85 marks; 24,000 cwts. "Godulla" at 16.85 marks; 25,000 cwts. P. H. at 17, and 10,000 cwts. Silesian Union at 16.75. According to latest mail accounts, dated 13th instant, nobody dry No. 2, \$15.50 @ \$17; Gray Forge, \$14.50
@ \$16.
Scotch Pig.—The transactions during the week have been of a very trifling nature.
We repeat former quotations viz. Glengar.
We repeat former quotations viz. Glengar. 1/2 P pound all along on their output a prevailing rates. We quote the domest article 4%\$ @ 5\$, currency, for Common and 8%\$ @ 83%\$, currency, for Refined The latter is inactive. They write from London under date June 13: "A dull drag Old Rails.—In the absence of business London under date June 13: "A dull drag we quote nominally \$17 @ \$18 as the market price here. during the fortnight. We quote ordinar Silesian £18, compared with £20. 5/@ £20 Io/ same date last year." At the advance in Europe limits for Silesian at New York have been raised to 534 @ 55%, gold. Stock here 20 tons. Sheet Zinc.—There is a mod erate demand for Sheet, but trade thereis dull and prices are more or less nominal We quote: Mosselmann, 7%¢ @ 7%¢, gold and Domestic, 6%¢ @ 6%¢, currency.

Nickel—Is steady in Europe and firmer

here at \$1.20, currency, with a moderat trade doing.

Ant'mony .- The quotation in London on the 13th inst. was £49. We quote the same here 121/4 @ 121/4, gold. There is a fair

#### COAL.

During the past week a considerable im-provement has taken place in Coal. The to cent advance for July has driven a great many buyers into the market and largely increased the volume of business. At noon yesterday the Delaware, Lackawanna and Western Railroad Company held its 154th sale of Coal, disposing of 50,000 tons of Scranton Coal, deliverable at the company's Coal wharf at Hoboken, N. J., during the month of July. The following were the prices:

were me	brices;	
18,000 tons 15,000 tons	Steamer \$3.47½ @ Grate 3.47½ @ 3.47½ @ Egg 3.57½ @ 3.87½ @ 3.87½ @ 3.87½ @ 3.25 @ Chestnut 3.25 @	\$3.49 60 3.58% 90 3.88
	3.33 W	****

The following is a comparison with previous sales this year :

Size.	Jan'y	Feb'y	March 37.	May 1.	May
Steamer Grate Egg Stove Chestnut Pea	\$3.10 3.12½ 3.14 3.57 3.11	\$3.11½ 3.07½ 3.15½ 3.55 3.00 2.12½	3,21 1/3 3,40 3,69 1/4 3,18	\$3.30 % 3.30 3.45 3.76% 3.15	\$3.42 % 3.45 3.56 % 3.75 3.25

Many dealers expressed the feeling that the sale ought to have shown higher figures. As it is, however, it very accurately repre-sents the market. It is, indeed, much bet-ter than the printed or written quotations, and gives a very fair id-a of what is actually paid for Coal.

n		
Θ	EXPO	ORTS
0	Hamburg.	Quan. Value.
	Quan Value	Mf. fron, plegs vs &co.
,	Copper, cks. 150 \$31,200	Pumps, pkgs. 49 1,718
n	Quan. Value. Copper, cks. 150 \$31,200 Pumps, bxs. 2 200 Nails, pkgs. 39 105 Ag. imp. pkgs. 37 2552	Cr'ge mat., pgs 118 4,138
f	Ag. imp., pkgs 91 2,552	Cisplatine Republic.
d	Mr. iron, pkgs 13 677	Mf. iron, plegs vr acc
0	Handspikes 152 135 Hdw., pkgs 99 2,785	
t	Hdw., pkgs 99 2,785 Sew. mach, cs. 646 14,147	Wash. ma., cs. 6 88 Pistols, cs 3 373 Ag. imp., pkgs 712 9,906
e	Mach'y, pkgs. 14 1,408 C'ge mtls., pgs 30 305	Ag. imp., pkgs 782 9,906
5	Bremen.	
5	Mach'y, cs 6 572	Tinware, cs 3 56
(4)	Hdw., pkgs 15 427 Pl't'd ware, cs 3 170	Havre.
t	Sew. mach. cs. I 60	Hdw., pkgs 85 1,601 Cutlery, cs 11 1,605
е	Pumps, pkgs. 10 1,000 Ag. imp., pkgs 181 7,350	1 A.S. 1010. DESS 190 2 Sec
	Wheels, case. 1 205 C'ge mtl. pkgs 26 200	Fire engine v z coo
		Copper, bbls. 136 28,000
8	Antwerp.	Mach'y, case. 1 120 R. R ties 60 30
,	Hdw., pkgs 38 659 Sew, mach, cs. 26 1,600	R. R ties 60 30 Nails, kegs 30 85
n	Ag. imp., pkgs 16 1,007	Donald Wil-
0	C'ge mtls., pgs 5 258	Mf. iron, pkgs 27 #27
,	Liverpool,	Nails, kegs so 46
	Hdw., cs 135 3,599 Sew. mach., cs 5 1,554	
r	Mf. iron, pkgs. 2 558	Oporto.
V	Burners, cs 27 1,823	Revolver 1 10
f	Ag. imp., pkgs 560 12,220	Mf iron plose and and
8	Mach'y, pkgs. 21 3,339 Belting, cs 1 3,70	Mf. iron, pkgs. 154 1,045 Mach'y, cs 311 8,944 Nails, kegs 100 202
	R. R. Cars 4 4000	Nails, kegs 100 202
t	London.	Cutlows case
n	Hdw., pkgs 251 4,863	Hdw., cs 76 1,722
8	Ag. imp, pkgs 65 1,966 Pumps, pkgs. 2 93	China.
0	Cutlery, cs 10 120	Hdw., cs 3 110
-	C'ge mtls, pgs 36 825	Venezuela.
5	Bristol.	Hdw., cs 6 141
y	Pumps, cs 5 370	Bell 1 95
-	Glasgow.	Brasil. Nails, kegs 70 179
,	Belting, bales. 6 1,298 Ag. imp., pkgs 25 2,075	Nails, kegs 70 179 Cutlery, cs 90 2,377
_		Hdw., cs 55 836
8	Mf. iron, pkgs. 7 820 Hdw., cs 4 136	Hayti.
0	Gibraltar.	Nails, kegs so 70 Hdw., pkgs 3 60
1	Hdw., cs 1 33	Africa.
е	British North Amer-	Muskets, cs # 89
y	ican Colonies.	Muskets, cs 2 89 Bra's ke'l's pgs 19 2,906 Nails, kegs. 162 450 Hdw., pkgs. 18 397 Mach'y, pkgs. 7 95
0	Mf. iron, pkgs 223 1,417 Hdw. cs 20 240	Hdw., pkgs 18 207
1	Hdw. cs 20 240 Copper boil'rs 3 104	Mach'y, pkgs. 7 95 Ag. imp., pkgs 7 128
8		
8		Ag. imp., pkgs 7 128
8	Hdw., cs 13 196	Mi. iron, pkgs 5 113 United States of Co-
	Hdw., cs 13 196 Lig't'g r'ds, ft. 500 182 Nails kogs	Mf. iron, pkgs 5 113 United States of Co- lombia.
	Hdw., cs 13 196 Lig't'g r'ds, ft. 500 182 Nails, kegs 45 166 Mach'y, cs 1 109	Mf. iron, pkgs 5 113 United States of Co- lombia. Sew mach ca 36 2482
	Lig't'g r'ds, ft. 500 182 Nails, kegs 45 166 Mach'y, cs 1 109 British Possessions	Mf. iron, pkgs 5 113 United States of Co- lombia. Sew mach ca 36 2482
1	in Africa.	Mf. iron, pkgs 5 113 United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs. 261 5,817
1	in Africa.	Mf. iron, pkgs 5 113 United States of Co- lombia. Sew. mach., cs 36 1,480 Nails, kegs. 31 49 Mach y, pkgs. 361 5,817 Iron safe 175 Mf. iron, pkgs 30 427
	in Africa.	Mf. iron, pkgs 5 113 United States of Co- lombia. Sew. mach., cs 36 1,480 Nails, kegs. 31 49 Mach y, pkgs. 361 5,817 Iron safe 175 Mf. iron, pkgs 30 427
	in Africa.	Mf. iron, pkgs 5 113 United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs. 261 5,817 Iron safe 1 75 Mf. iron, pkgs 30 427 Wire ci'th, cs. 3 595 Cutlery, cs. 3 595 Cutlery, cs. 3 524
	in Africa.  Hdw., es 135 3,755 Mach'y, es 18 300 Nails, kegs 108 400 C'ge mtl., pgs. 92 8,470 Ag. imp., pkgs 302 6,350	Mf. iron, pkgs 5 113 United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs. 261 5,817 Iron safe 1 75 Mf. iron, pkgs 30 427 Wire ci'th, cs. 3 595 Cutlery, cs. 3 595 Cutlery, cs. 3 524
	Hdw., cs 135 3,755 Mach y, cs 18 300 Nails, kegs 108 400 C'ge mtl., pgs. 92 2,470 Ag. imp., pkgs 302 6,330 British Australia.	Mf. iron, pkgs 5 113 United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs, 261 5,877 Iron safe 1 175 Mf. iron, pkgs 3 5427 Wire cl'th, cs. 3 595 Cutlery, cs 5 224 Tinware, pkgs 3 67 Revolvers, cs. 2 475 Hdw., pkgs 218 1,853
	in Africa.  Hdw., cs	Mf. iron, pkgs 5 113 United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs. 261 5,817 Iron safe 175 Mf. iron, pkgs 30 Wire cl'th, cs. 3 595 Cutlery, cs. 3 595 Tinware, pkgs 3 475 Iridw., pkgs. 218 475 Iron, pkgs. 218 1,853
a -	Hdw. cs 135 3,755 Mach y, cs 18 30 Nails, kegs 18 30 Nails, kegs 18 30 C'ge mtl., pgs. 92 2,470 Ag. imp., pkgs 302 6,350 British Australia. Arms, case 1 90 Trucks 2 1,625 Pumps, pkgs. 8 757	Mf. iron, pkgs 5 113  United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs. 261 5,817 Iron safe 1 75 Mf. iron, pkgs 30 Wire cl'th, cs 3 595 Cutlery, cs 3 595 Cutlery, cs 475 Inware, pkgs 3 475 Iron, pkgs 218 1,853 Locomotive 1 3,500 683
a t	Hdw., cs 135 3,755 Mach y, cs 18 300 Nails, kegs 108 400 C'ge mtl., pgs. 92 4,470 Ag. imp., pkgs 302 6,350 British Australia. Arms, case 1 90 Trucks 2 1,625 Pumps, pkgs. 8 757 Bells, cs 5 235 Cr'ge mtl., pgs 142 1,014	Mf. iron, pkgs 5 113 United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs, 261 5,817 Iron safe 175 Mf. iron, pkgs 30 427 Wire cl'th, cs. 3 595 Cutlery, cs. 5 224 Tinware, pkgs 3 68 Evolvers, cs. 475 Hdw., pkgs. 126 2,222 Iron, pkgs. 126 1,853 Locomotive 1 3,500 C83 Sandwich Islands.
t t	Hdw., cs 135 3.755 Mach y, cs 18 300 Nails, kegs 18 300 Nails, kegs 18 300 Nails, kegs 18 300 Nails, kegs 18 300 Trucks 2 1,625 Pumps, pkgs 302 Trucks 2 1,625 Pumps, pkgs 8 757 Bells, cs 5 235 Crige mtl., pgs 142 3.914 Iron, pkgs 206 247	Mf. iron, pkgs 5 113 United States of Colombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs, 261 5,877 Mf. iron, pkgs 30 427 Wire cl'th, cs. 3 595 Cutlery, cs. 5 22 Tinware, pkgs 3 475 Hdw., pkgs. 12 1,853 Locomotive. 1 3,500 Pi't'dw're, pgs 688 Sandwich Islands. Mf. ir'n, pgs. 1,864 55,516 Coal, bbls 138 450
t t	Hdw., cs 135 3.755 Mach y, cs 138 300 Nails, kegs 108 400 C'ge mti., pgs. 92 2.470 Ag. imp., pkgs 302 6.350 British Australia. Arms, case. 1 90 Trucks 2 1,625 Pumps, pkgs. 8 757 Bells, cs. 5 235 Cr'ge mti., pgs 142 3.914 Iron, pkgs. 206 247 Belting, cs. 6 1,700 Ag. imp., pkgs. 8 6 1,700	Mf. iron, pkgs 5 113 United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs. 261 5,817 Iron safe 1 75 Mf. iron, pkgs 30 427 Wire cl'th, cs. 3 595 Cutlery, cs 5 224 Tinware, pkgs 3 668 Revolvers, cs. 2 475 Hdw., pkgs. 218 1,853 Locomotive 1 3,500 Pl't'dw're, pgs 688 Sandwich Islands.  Mf. ir'n, pgs. 12,864 55,516 Coal, bbls 538 450 Bellows 10 160
a t	Hdw., cs	Mf. iron, pkgs 5 113 United States of Co- lombia.  Sew. mach., cs 56 1,480 Nails, kegs 21 49 Mach'y, pkgs. 261 5,817 Hron safe 175 Mf. iron, pkgs 30 427 Wire cl'th, cs 5 55 Cutlery, cs 5 224 Tinware, pkgs 3 66 Revolvers, cs 2 475 Hdw., pkgs. 76 2,222 Iron, pkgs 218 1,853 Locomotive 1 3,500 Pl'tdw're, pgs 8 688 Sandwich Islands.  Mf. ir'n, pgs. 12,864 55,516 Coal, bbls 532 Bellows 10 160 Tinware, cs 23 600 Wire, pkgs 13 600 Wire, pkgs 13 600
a t	Hdw., cs 135 3,755 Mach y, cs 136 300 Nails, kegs 108 400 C'ge mtl., pgs. 92 2,470 Ag. imp., pkgs 302 6,330 British Australia. Arms, case 1 90 Trucks 2 1,625 Pumps, pkgs 2 3757 Bells, cs 5 235 C'ge mtl., pgs 142 3,914 Iron, pkgs 206 2,47 Belting, cs 6 1,700 Ag. imp., pkgs 20 2,50 Hdw., cs 580 10,034 Cutlery, cs 2 800	Mf. iron, pkgs 5 113 United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs. 261 5,817 Mf. iron, pkgs 30 427 Wire cl'th, cs. 3 595 Cutlery, cs. 5 22 Tinware, pkgs 3 475 Hidw., pkgs. 218 1,853 Locomotive. 1 3,500 Pl't'dw're, pgs 688 Sandwich Islands.  Mf. ir'n, pgs. 12,864 55,516 Coal, bbls. 532 Bellows. 10 160 Tinware, cs. 23 600 Wire, pkgs. 134 1,400 Wire, pkgs. 134 1,400 Wire, pkgs. 134 1,400
t t	Hdw., cs 135 3.755 Mach y, cs 18 30 Nails, kegs 18 30 Nails, kegs 18 30 C'ge mtl., pgs. 92 2.470 Ag. imp., pkgs 302 6.330 British Australia.  Arms, case 2 1,625 Pumps, pkgs. 8 757 Bells, cs 2 335 C'ge mtl., pgs 142 3.914 Iron, pkgs 206 247 Belting, cs 6 1,700 Ag. imp., pkgs 82 1,593 Idw., cs 585 10,034 Cutlery, cs 2 380 Mt. iron, pkgs 2 380 Mt. iron, pkgs 4 400 Mt. iron, pkgs 4 400	Mf. iron, pkgs 5 113 United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs. 261 5,817 Iron safe 1 175 Mf. iron, pkgs 30 477 Wire cl'th, cs. 3 595 Cutlery, cs. 3 595 Cutlery, cs. 3 595 Cutlery, cs. 2 475 Iron, pkgs 3 676 Revolvers, cs. 2 475 Iron, pkgs. 218 1,853 Locomotive. 1 3,500 Pl't'dw're, pgs 688 Sandwich Islands. Mf. ir'n, pgs. 12,864 55,516 Coal, bbls 532 450 Bellows. 10 160 Thiware, cs. 23 600 Wire, pkgs. 134 1,400 Wire, pkgs. 134 1,400 Refrigerators. 2 75 Coal, tons. 106 575 Idw. pkgs. 154 2,530
a t	## Africa.  Hdw., cs	Mf. iron, pkgs 5 113  United States of Co- lombia.  Sew. mach., cs 36 1, 480 Nails, kegs 21 49 Mach'y, pkgs, 261 5,817 Iron safe 175 Mf. iron, pkgs 30 427 Wire cl'th, cs. 3 595 Cutlery, cs. 5 224 Tinware, pkgs 3 66 Revolvers, cs. 2 475 Hdw., pkgs. 128 1,853 Locomotive 1 3,500 Pl't'dw're, pgs 8 688  Sandwich Islands.  Mf. ir'n, pgs. 12,864 55,516 Coal, bbls 130 60 Tinware, cs. 23 600 Wire, pkgs. 134 1,400 Refrigerators. 2 75 Coal, tons. 1106 Grindstons. 15 575 Hdw., pkgs. 55 2,550 Grindstons. 55 2,550
a t	## African   ## Af	Mf. iron, pkgs 5 113  United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs, 261 5,817 Iron safe 1 175 Mf. iron, pkgs 30 427 Wire cl'th, cs. 3 595 Cutlery, cs. 5 224 Tinware, pkgs 3 66 Revolvers, cs. 2 475 Hdw., pkgs. 16 2,222 Iron, pkgs. 138 1,853 Locomotive. 1 3,500 Pl't'dw're, pgs 8 688  Sandwich Islands.  Mf. ir'n, pgs. 12,864 55,516 Coal, bbls 538 450 Bellows. 10 160 Tinware, cs. 23 600 Wire, pkgs. 134 1,400 Refrigerators. 2 75 Coal, tons. 106 Tinware, cs. 25 God, tons. 106 Grindstons. 105 Trefiderators. 2 75 God, tons. 105 Trefiderators. 2 75 Tre
a t	Hdw., cs	Mf. iron, pkgs 5 113  United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs, 261 5,817 Iron safe 1 175 Mf. iron, pkgs 30 427 Wire cl'th, cs. 3 595 Cutlery, cs. 5 224 Tinware, pkgs 3 66 Revolvers, cs. 2 475 Hdw., pkgs. 16 2,222 Iron, pkgs. 138 1,853 Locomotive. 1 3,500 Pl't'dw're, pgs 8 688  Sandwich Islands.  Mf. ir'n, pgs. 12,864 55,516 Coal, bbls 538 450 Bellows. 10 160 Tinware, cs. 23 600 Wire, pkgs. 134 1,400 Refrigerators. 2 75 Coal, tons. 106 Tinware, cs. 25 God, tons. 106 Grindstons. 105 Trefiderators. 2 75 God, tons. 105 Trefiderators. 2 75 Tre
a t	## African Hdw., cs 135 3,755 Machy, cs 18 300 Nails, kegs 18 400 Ed., kegs 19 400 Ed., kegs 19 50 Md., kegs	Mf. iron, pkgs 5 113  United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs, 261 5,817 Mf. iron, pkgs 30 427 Wire cl'th, cs. 3 595 Cutlery, cs. 5 224 Tinware, pkgs 3 66 Revolvers, cs. 2 475 Hdw., pkgs. 218 1,853 Locomotive. 1 3,500 Pl't'dw're, pgs 3 688  Sandwich Islands.  Mf. ir'n, pgs. 12,864 55,516 Coal, bols. 538 Sellows. 10 160 Tinware, cs. 23 600 Wire, pkgs. 134 1,400 Refrigerators. 2 75 Coal, tons. 106 Syr Hdw., pkgs. 35 2,550 Crindrones. 95 Crindrones. 95 Coal, casks. 200 L225 Coal, cols. 8 390 Lead, rolls 7,065
a t	## African Hdw., cs 135 3,755 Machy, cs 18 300 Nails, kegs 18 400 Ed., kegs 19 400 Ed., kegs 19 50 Md., kegs	Mf. iron, pkgs 5 113  United States of Co- lombia.  Sew. mach., cs 36 1,480 Nails, kegs 21 49 Mach'y, pkgs, 261 5,817 Iron safe 1 175 Mf. iron, pkgs 30 427 Wire cl'th, cs. 3 595 Cutlery, cs. 5 224 Tinware, pkgs 3 66 Revolvers, cs. 2 475 Hdw., pkgs. 16 2,222 Iron, pkgs. 138 1,853 Locomotive. 1 3,500 Pl't'dw're, pgs 8 688  Sandwich Islands.  Mf. ir'n, pgs. 12,864 55,516 Coal, bbls 538 450 Bellows. 10 160 Tinware, cs. 23 600 Wire, pkgs. 134 1,400 Refrigerators. 2 75 Coal, tons. 106 Tinware, cs. 25 God, tons. 106 Grindstons. 105 Trefiderators. 2 75 God, tons. 105 Trefiderators. 2 75 Tre

#### IMPORTS

t.	
	Hardware.
a	Boker Hermann & Co.
n-	Cutlery and Hard-
	ware, pkgs., 33
at	Carey Samuel,
ic	Millstones, 449
	Folsom H. & D.
n,	Mdse., pkgs., 12
d.	Frasse P. A. & Co.
m	Mdse., pkgs., 1
g-	Livingstone W. & F.
	Millstones, 884 Mason J. W. & Co.
88	Wire rope; coils, o
n	McCoy & Co.
y	Cases, 6
Ď.	Casks, 1
n	Mdse., pkgs., 6
	Schoverling & Daly,
e	Gun wads, cs. 4
k	Mdse., pkgs., 6
1-	Struller & Law,
n	Empty Cartridge cs.,
	and wads, cs., 4
1.	Woodruff A. J.
1,	Cases, 7 Wiebush & Hilger Hard-
	ware Co.
r	Hardware, cutlery &
e	anvils, pkgs., 227
10	Order, .
- 1	#311 h

Files, cks., 9 Iron. Bank of Montreal. Bank of Montreal,
Bar, bdls., 10
Lang W. Bailey & Co.
Bars. 252
Bundles. 20
Naylor & Co.
Bars, 14,768
Coils., 561
Bundles, 662
Perkins, Livingstone
Post, Post, Cast, tons, 150 Spiegel, tons, 1 Taylor Moses & Co Taylor Moses & Co. Spiegel, kilos, 202,98 Order, Bars, 2315 R. R. bars, 1883

Spiegel, tons, 247% Wire, bdis., 32 Steel. Brown William,

Bundles, 46 Cases, 13 Carey & Moen, Wire, bdls., 80 Merrick C. S. & Co. Bars, 8 Bundles, 74 Cases, 5 r Thos. & Son, Mds., pkgs., Woodford W. O. Bars, 12 Bundles, 140 ler, Scrap spring, tons, 54 Cases, 21 Casks, 26 Casks, 26 Bundles, 77 Bars, 1

Metals. Bank of Montreal, Bank of Montreal,
Tin plates, bxs., 1970
Byrne Joseph & Co.
Tin plates, bxs., 414
Bruce & Cook,
Tin plates, bxs., 250
Cort N. L. & Co.
Tin plates, bxs., 350
Drexel, Morgan & Co.
Tin plates, bxs., 1390
Hurtz Henry,
Tin, slabs, 1119
Madge Thos. I.
Scrap metal, lbs., 400
Montell F. T. & Sons,
Scrap copper, bbls, 2

Scrap copper, bbls, 2 Scrap metal, bbls., 6; scrap metal, bbls., 6;
Cs. 1.
Naylor & Co.
Tin plates bxs., 625
Pratt Chas. & Co.
Tin plates, bxs., 241
Phelps, Dodge & Co.
Tin plates, bxs., 7176
Bar tin, bbls., 50
Antimony, cks., 25
Scheider Joseph & Co.
Tin plates, bxs., 534
Thompson D.
Tin plates, bxs., 1229
Order. Order, Tin, cs., 9 Antimony, eks., 25 Tin plates, bas., 6683

#### OLD METALS, PAPER STOCK, &c.

Business in Old Metals and Paper Stock still continues unchanged from the dullness previously noted. The market is without ctivity, and prices are about the same as last reported. There is a demand for bogus Manilas, but other stocks are without in

quiry.
The purchasing prices offered by dealers

for Old Metals are as follows:		
Copper, heavy per 7b. \$0.13	0	
Copper Bottoms 15 .101/2	0	
Yellow Metal " .10	GB.	
Brass, heavy " .09	00	
Brass, light	GA.	* *
Composition, heavy "	0	
Lead, solid " ,021/2		
Tea Lead " .02	0	
Zinc		
Pewter, No. 1	0	
Pewter, No. 2	0	
Wrought Iron prton. \$16.00	0	**
Light do 41 9.00	6	
Stove Plate 44 9.00	a	
	0	7.8
Machinery do 10.00		7.0
Grate Bars " 3.50	00	

The prices current for Rags, &c., are as

follows:		
Canvas, Linen	40	3 c. @ 3%c
Cotton, No. 1	84	1 1/2 C. @
White, No. 1	66	3½c. @
Seconds	PD.	11/4 C. @
Mixed, Woolen	6.0	8 C. @ 3 C 61/4 C. @ 7 C
Gunny bagging	**	3 C, @
Jute butts	0.6	2 4 C. Q
Book Stock Newspaper Stock	6.0	1%c. @ 1%c.
Waste Paper and Scraps	44	%c. @
Kentucky Bale Rope	64	4 C. @
Oakum Junk, No. 1	4	4%C. @ 5 C.
Tarred Shaking	6.6	i c. @ 11/4 c.

#### PHILADELPHIA.

Office of The Iron Age, 220 South Fourth St. PHILADELPHIA, June 25, 1878.

Pig Iron .- The market is without change Arig Iron.—The market is without change, and sales are mostly on the basis of last week's quotations. The inquiry for small lots has been more active, and in this way quite a fair business has been done. At this season consumers carry as light stocks as possible, and as many are preparing to close their establishments for stock-taking, remains the a way light business may be pairs, &c., a very light business may be looked for during the next month or six weeks. Prices are fairly steady for known brands, and although sales at very low prices are reported, the market seems to be less feverish any excited than it was some time ago. Consumption is exceedingly light, however, and there is nothing in the outlook to warrant any anticipation of improvement in the immediate future. Ordinary lots of No. 1

Ores.—We quote Magnetic Iron Ores at \$2.50, f. o. b. at Hacklebarney mines, for "Blue" Ore, hand broken and selected. "Red" Ore, price \$2.75 f. o. b. cars.

Blooms.-The market is extremely dull, Blooms,—The market is extremely dull, and it is exceedingly difficult to effect sales even at the reduced figures. We quote: Sunken Scrap Blooms (2464 lb), \$40 @ \$43; Northern Ore Blooms (2240 lb) \$37 @ \$39; best quality Charcoal Billets (2240 lb), for wire and steel purposes, \$50 @ \$52.50; Bars do., \$62.50 @ \$65; Sheet Iron Blooms, cornered (2464 lb), \$55 @ \$58; Cold-blast Charcoal Plate Blooms, \$51 @ \$53; run-out Anthracite, \$50 @ \$51. \$53; run-out Anthracite, \$50 @ \$51.

Muck Bars.—Business is restricted to small lots, at about \$30 @ \$32, Philadelphia delivery, according to quality.

Structural Iron.—Without any special change to report, the outlook appears to be very encouraging, so far as regards the demand for Shaped Iron. The amount of orders on hand is very considerable, and with several important matters under considera-tion certain to result in actual business at some not very distant period, the mills have every reason to look for continued activity. Bridge work is being carried on to an important extent. The latest contract which has come under our notice is that for the Lehigh Valley Railway Co., at Towanda. The prospects for shipbuilding are also fairly encouraging, contracts for one, if not two, good-sized Iron vessels will probably be closed here to-day, with intimations of others to follow. Prices are steady as follows: Angles, 2.2¢ @ 2.4¢; Tees, 2.4¢ @ 2.5¢; Beams and Channels, 2.7¢ @ 2.8¢.

Plate and Tank Iron.—Business in this department is in a fairly satisfactory condition, so far as the amount of work is conit seems likely that the mills will have sufficient orders on hand to carry them well into next month, so that a short period in which the demand may fall off will not seriously affect the market. Prices on the whole are affect the market. Prices on the whole are steady, but concessions may be made in case of specially desirable orders. We quote: Common Plates, 2.2¢ @ 2.3¢; Tank Iron, 2.3¢ @ 2.5¢; C. No. 1, 2.4¢ @ 2.6¢; Shell Iron, 2.75¢ @ 2.9¢; Flange Iron, 3.75¢ @ 4¢; Solid Firebox, 4.85¢ @ 5¢; and Best Bloom, 5.5¢ @ 6¢.

Iron.-Business is duller than usual, although this is the dullest season of the year. There is positively no demand except for small lots, and these are not very frequent. The mills will probably shut down in course of a week from date, and unless the outlook improves it is likely the unless the outlook improves it is likely the stoppages will be of longer duration than usual. We quote: Common Sheet, No. 24 to 26, 2.9¢ @ 3¢; No. 27 to 28, 3.1¢ @ 3.15¢; Refined Sheet Iron, No. 25 to 28, 3.3¢ @ 3.4¢; No. 22 to 24, 3.1¢ @ 3.2¢; No. 16 to 21, 3.1¢; Best Bloom Sheets, No. 25 to 28, 5¢ @ 5.2¢; No. 22 to 24, 5¢; No. 16 to 21, 4.7¢ @ 4.8¢; Common Red Plates, 5-16 to 18, 2.4¢ @ 2.5¢; Refined Plates or Blue Annealed, 5-16 to 18, 2.5¢ @ 2.6¢; American, R. G., 5-16 to 18, 3¢ @ 3.1¢; Best Bloom, 5-16 to 18, 4.9¢ @ 5¢; Philadelphia Russia, 6¢ @ 6.5¢; A. Patent Planished, 10½¢; B. Patent Planished, 9½¢; Bloom Galvanized, 40%; Refined Galvanized, 50%.

chases appear to have been small and to ply immediate necessities. Prices have kened a little, nominally so at any rate, and 1.9¢ is now accepted by some who up to a recont date were firm at 2¢. Prices are very irregular, however, and the cutting in extras is even more general than formerly extras is even more general than formerly. There is some hope that toward fall business may assume a better shape, but there is nothing in view at present likely to change things for the better during the summer menths. An order for hammered axles from an Eastern company has been received at the Pencoyd Iron Works, as also an order for rolled axles for the Pennsylvania Company. We guete Bars as before. vania Company. We quote Bars as before say 1.5¢ for Common, to 2¢ for Best Refined.

Steel Rails.-The demand keeps up quite actively and several fair sized orders have been taken during the past week. The Eric Railway Company have closed for 20,000 Railway Company have closed for 20,000 tons, divided among four companies, at something over \$44, according to delivery. Other small lots, to the extent of 6000 or 8000 tons have also been closed, and the inquiries seem to show that the requirements of the roads are larger than was estimated during the early spring months. Winter deliveries are now being asked for; buyers find it diffi-cult to place their orders for early delivery, and as some sellers are rather anxious for winter work comparatively low prices are accepted for deliveries to suit the manufacturer. The difference in prices is said to be such in some cases as to make it an induce-ment for buyers to wait as long as possible. We repeat quotations of last week, viz., \$43 @ \$45 at mills, according to location, with concessions for deliveries to suit sellers' convenience

Iron Rails.—We are glad to note some little improvement in the demand, and also that contracts have just been closed by the Cambria Iron Company for lots aggregating from 15,000 to 18,000 tons. The larger por-tion, however, was bought and sold under somewhat exceptional circumstances, which in general terms may be stated as follows: In general terms may be stated as follows:
A road in the Northwest, which was projected provious to the panic, came under the
necessity of completing the work at once or
of surrendering valuable franchises. By
special arrangements they have been enabled
to place the order for Rails as above, upon
terms which would scarcely have been
granted had it not been that the sellers had
a large accumulated stock of puddled Baron. a large accumulated stock of puddled Bar on hand, as well as several thousand tons of old Rails, all of which it was extremely desirable should be turned into other securities In this way an arrangement was made immediate future. Ordinary lots of No. 1
Foundry Iron are quoted at \$17.6, \$17.50; average qualities nominally about \$18, while for others of very superior quality \$18.50 [@ \$19 is obtained; No. 2 Foundry, \$16.6] some seem to have made, based upon the \$16.50, and Gray Forge, \$15.6 \$16. Market dull. ders in the market, one for several thousand tons, so that prospects are rather encouraging. Sales of light sections have been made at \$36, and for ordinary sections \$32.50. We quote the market steady at \$32.50 (\$34.50, according to section, quality and terms of payment.

Old Rails,-The market shows signs of renewed activity, and although no large lots have been placed on the spot, there are inquiries which will probably lead to heavy sales in the course of the week. Prices, without being quotably higher, are firm, and \$19.50 has been paid for one or two spot lots, quality being extra. We are also advised of sales of 5000 tons in two lots, deliveries in sales of 5000 tons in two lots, deliveries in the interior of the State, at \$10.50, and this quotation seems to be the market rate for good lots. Common qualities may be had at \$18.50 and possibly less, the extreme figures being \$18 @ \$20, according to quality, terms, &c. Market steady and firm.

Scrap Iron.—The market is very steady and the supply not more than equal to the demand. Prices as before: Wrought, \$21@ \$23 ; Cast, \$14 @ \$15.50.

Nails.-The market is in a badly demor-Mails.—Ine market is in a bady demor-alized condition, owing to several thousand kegs being thrown upon the market for whatever they would bring, cash on deliv-ery. These nails were held by a large dry-goods firm, who had been supplying the man-ufacturers with merchandise for their store, and as they required to turn them into money, they put them on the market at al-most anything over \$2. 10 for round lots, prompt cash. The regular wholesale price is supposed to be about \$2. 30, but there is

to uniformity in rates.

Lead.—The market is dull at 3¢ to 3 1/8¢ tion, so far as the amount of work is concerned, several mills being quite full of orders and others busy in meeting the current demand. There are several inquiries the market for moderate-sized lots, and of all kinds will also be reduced on the 1st proximo.

#### PITTSBURGH.

Office of The Iron Age, 77 Fourth Avenue, } PITTSBURGH, June 25, 1878.

There has been no improvement in general business, nor is it expected until after harvest. In Iron circles the feeling is particularly despondent, owing in part to the recent financial embarrassment of some prominent firms, whose aggregate liabilities foot up considerably more than a million of dollars. While these failures will fall with considerable severity upon the creditors, some of whom possibly are not in condition to stand up under them yet they will not be without some good effects. In the first place they demonstrate fects. very clearly that the firms in question have been doing business at a loss, selling their products below cost of production, and should serve as a warning to others, as it proves very clearly that such a course if persisted in can have but one ending, and that is ruin. Already there is a feeling among the trade, not only here but throughout the West, that it is much better to do nothing than to work at an actual loss, and the probability is that there will be a reduced production this summer, and even now but few if any of the mills here are

and, moreover, since the adjournment of Congress confidence has been restored, as the financial policy of the government as well as the tariff and other important matters will be permitted to remain undisturbed until next session.

Pig Iron.-To use a common phrase bottom has dropped clean out of the Pig Iron market; there is no demand deserving of the name and as there will likely be a pretty general suspension for a month or more, the prospect for the immediate future is by no means encouraging, either as regards demand or price. It is claimed by those who are in a position to know, that even those furnaces favorably located and supplied with all the latest appliances and improve-ments, cannot more than hold their own, under the most economical administration, and if this be so what is to become of these old time furnaces, unfavorably located, built before the discovery of new processes, and which of course cannot compete with the former? This question is easier asked than answered, but the probability is that very few of these old time furnaces will ever be started up again; for even when times do get better they, being behind the age, cannot be operated with any show of success. This being the case the production is likely to continue light as compared with what it was a few years ago, for some time what it was a few years ago, for some time to come, and with no stock, scarcely excepting that in the hands of producers, and with an increased consumption better prices may be obtained. But in the present condition of affairs, with no demand and a very limited consumption, the market could not possibly be in a much werse condition, and, as already stated, there is not likely to be any immediate change for the better. Bituminous Coal Smelted Irons better. Bituminous Coal Smelted Irons quotable at \$19 (@ \$20, 4 months, for Foundry, and \$16.50 (@ \$18.50, 4 months, for Forge, the latter figure for standard brands of Red-short. Coke Irons—\$18 (@ \$20, 4 months, for Foundry, and \$15 (@ \$17, 4 months, for Forge. Hanging Rock Charcoal—\$20 (@ \$22, 4 months, for Mill, and \$23 (@ \$26 for No. 2 and Foundry. Bassemer Iron. \$26 for No. 2 and Foundry. Bessemer Iron, dull; quoted at \$19.50, 4 months.

Manufactured Iron.—The demand for all kinds of Manufactured Iron continues to fall off and the market is generally reported dull. Some few of the mills still have a fair trade in specialties, but for the ordinary merchant the inquiry is light and prices very unsatisfactory. As stated in our last report, there is a general aversion on the part of manufacturers to accumulation. ing stock, except what is necessary to keep up an assortment; and while the most of the mills are still running, but few if any of them are working up to anything like their full capacity. However, notwithstanding the depressed and unsatisfactory condition of affairs at present, the trade are hopeful of the future, and it is earnestly hoped that their expectations may be more than realized. In addition to curtailing production the recent failures will have a tendency to check selling at cut-throat rates, demon-strating as they do that selling goods below cost can have but one result, and manufac-turers here aver that they will not accept orders unless there is a small margin for profit. We continue to quote on a basis of \$1.70 @ \$1.80, 60 days, for good Refined Bars, and one to two-tenths less for poorer stocks

Nails.-The market continues in a very unsatisfactory and demoralized condition, as in addition to a light demand prices have been cut to such an extent that there is, to the manufacturer, no margin whatever. There are no established rates, each firm being at liberty to make their own prices, and consequently cutting has been the order of the day for some time past. We are cognizant of jobbers here sending out \$2.05 cognizant of jobbers here sending out \$2.05 rates, with rumored sales as low as \$2, cash, and at the same time we, are cognizant of manufacturers refusing to sell either in large or small lots under \$2.15 rates. It is not unfrequently the case that jobbers, when trade is dull, cut prices down below cost in first hands. We saw the copy of a letter from each other in the Northwest to another. first hands. We saw the copy of a letter from one jobber in the Northwest to another, offering to furnish from 1000 to 5000 kegs, for immediate delivery, at \$2.15, delivered there, or, as already stated, equal to bottom price of some of our manufacturers, delivered here. We would advise buyers to pick up all they can obtain within the range of the price country. the prices quoted, as in no event are prices likely to go any lower, but, on the other hand, the probability is that the Western likely Association will put up rates some of these days. But few of the factories in the West are in operation, and while stocks in first hands are small, jobbers, particularly in the stocked, having taken advantage during the spring of the very low rates of transporta-

Horse and Mule Shoes .- The demand con tinues light, as it usually is this month, while prices remain unchanged. Shoenberger & Co. continue to quote their Juniata rand in 100 keg lots at \$3. 37½ @ \$4. 37½. Steel.—The demand is light as compared

with what it was a month ago, yet manufacturers generally report business fair for the season, although they complain of low prices. Tool Steel, according to quality, 11¢ prices. 1001 Steel, according to quanty, 119 (@ 139, most of sales at  $11\frac{1}{2}\phi$  (@ 12 $\phi$ . Machinery Steel,  $5\phi$  (@  $7\phi$ ; Boiler Plates,  $7\phi$  (@  $8\phi$ .

Rails.—The market for Steel Rails steady at \$44 @ \$45, cash, and delivered at mills Steel Rail Ends—none in this market, and there is some inquiry for them; Steel Billets, \$43 @ \$44; Steel Blooms, \$41, cash, deliv-\$43 ( \$44; Steel Blooms, \$43, Cash, xtra lots, \$21, cash

Wrought Iron Pipe.-The demand is rather better than it was a month or so ago, but it is still backward as compared with what it usually is at this season of the year; prices continue very unsatisfactory. Discount on gas, steam and water pipe, 60 to Oil-well tubing and easing net cash.

Wheels very dull, \$18 @ \$18.50, cash, to \$19, large suits here recently at 164—one of 2000 4 mos.; Boiler Scrap, \$23.50 @ \$24; Car Axles, \$27 @ \$28; Car Springs, \$35 @ \$36.

Window Glass-Is reported dull with no mprovement in the demand probable this side of August, Discounts unchanged; caronal lots, 75%, 60 days, 2 % off for cash.

Coke.-There is no abatement in the de mand but prices are no better, \$2.15 @ \$2.20 per ton, delivered free on cars in Pitts-burgh. The Coke trade has been unusually neavy this year, the low price at which it is being sold having caused a largely increased consumption.

#### CHATTANOOGA.

Office of The Iron Age, Market and 8th Sts., t CHATTANOOGA, June 25, 1878.

General business shows some decided signs of improvement. In fact the past week shows a better feeling among business men than is apt to prevail at this time of the year. In the metal trade the best sign is in the fact that the volume of production is fully maintained, except in the article of force iron, and we are informed that one of forge iron, and we are informed that one of the furnaces which blew out a few days ago will likely resume again in a short Prices are not likely to go any lower. ers are not pressing to sell and are quite firm in their views, so that the present may prob-ably be regarded as the bottom figures. The quality of Fig has been very decidedly improved in the past three or four months, which is giving better satisfaction to consumers, and this must soon have a favorable effect on sales of metal beyond the limits of the district. The market for Manufactured Irons has somewhat improved, though it has at no time been dull this year. We have had no hot weather this summer. The present week opened with a heavy, continuous, cool rain; it closes with fine, warm, breezy days and cool nights. Pig Iron.-Trade is much as it was, con

Pig Iren.—Trade is much as it was, consumers buying only to meet immediate wants and holders being firm in denying all pressure for concessions. The quotations cannot go lower, as the point has been reached which barely justifies furnacemen in keeping in blast. The quality of Irons will be improved in a more marked degree during the balance of the year than it has during the first months. Makers have learned that they must both economize expenses and first months. Makers have learned that they must both economize expenses and make a superior article or their profits and their trade will disappear together.

We quote: Coke Irons No. 1975. and their trade will disappear together. We quote: Coko Irons, No. I Foundry, \$17 @ \$18; No. 2, \$15 @ \$16; Gray Forge, \$13 @ \$14; White and Mottled, \$11 @ \$12. Hot Blast Charcoal—No. I Foundry, extra, \$20 @ \$21; do., \$18 @ \$20; No. 2 Foundry, \$16 @ \$18; Gray Forge, \$15 @ \$17; White and Mottled, \$15. Cold Blast Charcoal—Car Wheel Metal, \$22.50 @ \$275 c. do. Extra Standard. \$22.50 @ \$27.50; do., Extra Standard, \$24.60 @ \$29.50; Forge, \$17.60 @ \$22.

Muck Bar.—\$27@\$34: Old Rails, \$16.50 @ \$17.50. Old Car Wheels, \$18.

Ores.—Brown Hematite, 50 to 56 %,; \$\varphi\$ ton, \$1.75 @ \\$2.25. Red Fossiliferous, 50 to 56 %; \$\varphi\$ ton, \$1.70 @ \\$1.90. The above prices for Ores delivered in Chattanooga on cars or on the wharf from flat-boats.

Nails-Are brisk enough, but with the Nalls—Are brisk enough, but with the Upper Ohio River and Pittsburgh factories solling at \$1.90 at the factory and \$2.07\forall at Memphis, the chance for any profit at all is hardly visible. However, the rate of transport has kept Upper Ohio out of nearly all the Southern markets except the river towns, and our mills here have found plenty of business to keep them running without very materially cutting the rates they adopted when the Western Association made its compact fixing the price at \$2.40. We quote at \$2.25, with usual discounts on large lots.

Manufactured Iron.—The market some-

Manufactured Iron.-The market some thing more than holds its own. Merchant Bars are in good request. Bolts, spikes, &c., are brisk. The bar mills and those turning out the smaller articles of railway supplies have all they can do, with good prospects ahead for better trade in volume and some hope that in the future prices will improve. Bar we quote at \$2; Railroad Spikes, \$2.50, Light Rail, \$2.25; Track Bolts, \$3; Trestle Bolts, \$4.

Coke.—The market here is quiet, though the prospect that the workers of this district will eventually have to supply the furnaces in Central Alabama has given a decidedly more lively feeling to the trade. Dade and Sewanee have contracted with the manage-The transp is 240 miles, and for Dade about 200 miles. We quote at \$2.50 per ton, on cars, in Chattano

Coal .- We quote run of mine to manufacturers at \$1.50 @ \$2 per ton, on cars, at Chattanooga.

#### BOSTON.

JUNE 22.-Pig is dull, and, in spite of a new JUNE 22.—Pig is dull, and, in spite of a new steadiness in freights, the market must be called weak. We quote: \$19 for No 1, \$18 for No. 2, and \$17 for Gray Forge. Barcontinues quiet and easy, quoting \$39.50 for Refined and \$34 @ \$35 for Bolt; American Rails, \$32 @ \$37; Steel Rails, \$42 @ \$43, from mill. Nails are in light demand at unchanged prices. Sheet is selling at 3\$ @ 33\$ \$7\$. Ruscip is copied at 13\$ \$6 @ 34\$ \$7\$. Ruscip is copied at 13\$ \$6 @ 16\$. We quote light demand at unchanged prices. Sheet is selling at 3¢ @ 3½¢ Ø B. Russia is quiet at 10¾¢ @ 11¢. We quote English Spring Steel at 7¢ @ 8¢, gold; 9¢ @ 11¢ for German; 9¢ @ 11¢ for Machinery; 14¢ @ 15¢ for Cast; 10¢ @ 12¢ for Blister; 8¢ for American Spring; 13¼¢ @ 14¢ for Cast; 9¢ for Blister; and 8¢ for Machinery. Manufactured Iron of all kinds continues to meet with a very light demand. The nail manufacturers, since the break-up of their combination, are selling their proof their combination, are selling their products at all sorts of prices. The directors ducts at all sorts of prices. The directors of the reorganized Erie road have received bids for Steel Rails averaging \$44.75 per ton. They expect to complete a third rail in a chert time. in a short time. Copper.—Ingot is a little firmer since the large sale in London, but there is very little doing. We quote ished, 10½¢; B. Patent Planished, 9½¢; College and Casing net cash.

Scrap.—The market is generally reported dull, although all that can be expected in 50 ¼. Sac College and Indian proved business this fall, in view of the general depression in the Iron of an improved business this fall, in view of the general depression in the Iron between the abundant crops, which promise to be under the business. Prices nominally unchanged. No. 16½¢ & The American manufacturers of the abundant crops, which promise to be under the business this fall, in view of the general depression in the Iron of the abundant crops, which promise to be under the business. Prices nominally unchanged. No. 16½¢ & The American manufacturers of the abundant crops, which promise to be under the business this fall, in view of the general depression in the Iron of the abundant crops, which promise to be under the past few days, but pur-business and casing net cash.

Scrap.—The market is generally reported dull, although all that can be expected in the Iron of the abundant crops, which promise to be under the past few days, but pur-business are thought and casing net cash.

Scrap.—The market is generally reported dull, although all that can be expected in the Iron of the general depression in the Iron of the abundant crops, which promise to be under the past few days, but pur-business. Prices nominally unchanged. No. 16½¢ & The American manufacturers of the abundant crops, which promise to be under the past few days, but pur-business. Prices nominally unchanged. No. 16½¢ & The American manufacturers of the abundant crops, which promise to be under the past few days,

sheets. For vessels engaged in the home trade the price continues 18¢, with 10¢ for old in exchange. The English manufactures are selling at 13¢. There is no vessel on the dock, we believe, since Emery's new bark, the Penobscot, was completed. An important point to be considered in buying English Sheathing is that English manufactures do not make our kind of cut nails, but pursue the old method of casting, and, as this adds 3¢ @ 4¢ to the cost, consumers here of for-3\$\textit{\textit{g}}\$ (\$\textit{\textit{d}}\$ \text{to the cost, consumers here of foreign Sheathing have to buy American Nails. Our manufacturers will not sell their Nails to a buyer of foreign Sheathing at less than 20\$\text{\text{c}}\$, while a buyer of American Sheathing get the Nails at the same price as the Sheathing—say 16\$\text{\text{c}}\$. In a suit of say 2000 sheets, amounting to 12,000 pounds, 2000 pounds of Nails are required. For Manufactures we quote: New Sheathing 26\$\text{\text{c}}\$ : Relss and amounting to 12,000 pounds, 2000 pounds of Nails are required. For Manufactures we quote: New Sheathing, 26¢; Bolts and Braziers, 28¢; Yellow Metal Bolts, 20¢; do. Sheathing, 18¢. Lead is weak and again lower. Two cars sold at 3½¢. The Chadwick Lead Works have secured the contract for furnishing Lead Pipe for the Boston Water Works. We quote: Pig, 3½¢@ 3½¢, currency; Sheet, 6¢; Pipe, 6¢; Tin-Lined Pipe, 15¢; Bar Lead, 5½¢; all of these, excepting Pig, are subject to the usual trade or 10½ discount. Antimony is quiet at 12¢@ 13½¢, gold, for Boston spot lots. Speller is easy, closing at 4½¢@ 5¢ on the spot for 10-ton lots. Tin is dull and unchanged. We quote: Straits, 14½¢@ 14½¢; Banca, 17½¢@ 17½½¢; Banca, 17½¢@ 17½½¢; Coke, \$5.25@ \$5.50; and Terne, \$5.50 @ \$6, gold.—Commercial Bulletin.

#### ST. LOUIS.

Specially reported by Messrs. Spooner & Collins, Iron Commission Merchants, 217 North Third street, St. Louis, under date of North Third street, St. Louis, under date of June 20: Pig Iron has been only in fair demand the past week. Prices rule about the same. Southern Irons have to a large extent been withdrawn from the market at the present low prices. In most instances the standard brands are held for an advance. Old Rails are in very little demand, and prices low. Very few of our mills and foundries are running, this being their dull sea.

	No. 1.	No. 2.	Mill.	White and M't'ld	
M'souri Stone Coal	\$22.00	\$20.00	\$19.00	\$17.00	
Missouri Charcoal	20,00	19.00	18.00	16,00	
Tenn. Coke, very	20,50	19.00	17.50	Mot- tled.	White
soft and strong. Hang. Rock Char-	20,00	19.00	17.00	15.00	
Hang. Rock Char-	24.00			20.00	
coal, Cold-short.	23.00	21,00	Extra		
	Extra No. 1	No. 1	No. 1	No. z.	
	I. M. Ore.		Na-	Na- tive.	lice, m.
	Extra		В.		44%
Hann Dock Coles	No. I.		No. 1.	No. 2.	
Hang, Rock Coke. Moxahala Black-	23.00			19.00	
band Ores	23.00	23,00	21,00	19.00	

	23.00	24100	**.00	19.00	
COLD-BLAST	HARCO	AL-A	ll Nur	nbers.	
Hanging Rock		4	mos.	\$28.00 @	33.00
Tennessee		4	mos.	25.00 @	
Kentucky		4	mos.	25.00 @	
Missouri		4	mos.	25.00 @	
Georgia		4	mos.	25.00 @	
Alabama		4	mos.	25.00 @	
Assorted Bar Iron				1.75 @	
No. 1 Railroad		1	P roo		
Heavy Cast Scrap.			4.6		
Light " "			64		
Old Rails		4	mos.	10.00 @	
Old Car Wheels			mos.	17.00	

#### CINCINNATI.

Messrs, E. L. HARPER & Co. (successors to Messrs. L. R. Hull & Co.), under date of June 22, write us as follows: There has not been any noticeable variation in prices since last report, and it is not probable that any lower since the state of the state lower prices will be touched even during the present dull season. The stocks in the hands of buyers are light, and very few have now at any time over 30 day's supply on hand. The amount in hands of sellers is also reduced, and is mostly held by parties who need not press the market should they see decided evidence of its being more profitable to hold. Any decided improvement in general business would soon be felt by the iron Sewance have contracted with the management of Oxmoor furnaces, near Birmingham, interests, and it can be predicted with tolerable cortainty that with the ushering in of 500 tons, part of which has been delivered. If this proves satisfactory a permanent arrangement will follow. This Coke and the furnaces at \$4 per all yruling. We continue to quote: eral business would soon be felt by the iron interests, and it can be predicted with toler

any runng. we continue to quot	0:	
HOT-BLAST FOUNDRY.		
Hanging Rock C. C., No 1.		
Alice, No. 1 Extra, L. M	20.00 @	
" No. 1, N. O.	18.50 @	
Hanging Rock Coke and S. C., No. 1 S. C., No. 2	18.00 @ 20.00	
8. C., No. 2	15.00 @ 17.00	
Virginia Coke, No. 1	19.00 @ 20.00	
Shawnee S. C., No. 1	17.00 @ 17.50	
11 S. C. No. 2	16.00 @ 17.00	
Hocking Valley S. C., No. 1 S. C., No. 2	18.50 @ 19.00	
B. C., No. 2	16.00 @ 17.00	
PORGE IRONS,		
Hanging Rock, No. 1 C. C	18.00 @ 19.00	
Hanging Rock, No r Coke	16.50 @ 17.00	
Longdale, No. 1 Coke	16.50 @ 17.00	
Red-short, No. 1 Coke	18.50 @ 19.50	
Cold-short, No. 1	15.50 @ 16.00	
Old Rails, primecash,	19.00 @ 20.00	
CAR WHEEL AND MALLEABLE	i.	
Hanging Rock C. B	31.00 @ 33.00	
Cherokee C. B	30.00 @	
Southern and Western Brands	28.00 @ 30.00	

#### RICHMOND.

Mr. ASA SNYDER, Iron Merchant and Furnace Agent, Richmond, Va., writes as fol-lows under date of June 24: The demand for Foundry Pig Iron has improved under the incentive of prevailing low prices. I quote as below:

American Scotch Pig Iron......\$22.00 @ 23.00

Anthracite	. No. :				19.00 @ 20.00	
4.6	No.				18.00 @ 19.00	
4.4	No.				17.00 @ 18.00	
8.9					14.50 @ 15.50	
Coke, No. 1					19.00 @ 20.00	
					18.00 @ 19.00	
4 No. 3					16.50 @ 17.50	
Va. Cold-bl	ast Ch	areo	al, Cold	-short	20.00 @ 23.00	
Va. 66		66	Neu	tral	27.00 @ 28.00	
Va. Warm-	hlast	6.6		l-short,	18.00 @ 21.00	
Va.		64	Red	short	17.00 @ 18.00	
Old Rails					16.00 @ 17.03	

Wrought Scrap No. 1	17.00 @	-9
wrought scrap no. t		
Cast " (machinery)	17.00 @	
Richmond Refined Bar Iron	2C. @	
Horse Shoes per keg	4.25 @	
Mule " "	5.50 @	
Old Dominion Nails, Standard Size, \$2		

FOUNDRY IRONS.		- 1	. 2
No. 1 Hanging Rock, Charcoal\$	21.00 @ :	22.00	1
No. 2	18.00 @ :	20.00	1
No. 1 Southern, Charcoal	19.00 @.		Í
No. 2 11 11	16.00 @	17.00	8
No. 1 Hanging Rock, Stonecoal and			9
Coke	19.00 @	00.00	1
No. 2 Hanging Rock, Stonecoal and	-		8
Coke	17.00 @	18.00	1
No. 1 Southern, Stonecoal and Coke	17.00 @	19.00	1
No. 2 "	16.00 10	17.00	1
"American Scotch"	18,00 @:	30.00	
Silver Gray	15.00 @	17.00	
MILL IRONS.			
No. r Charcoal, Cold-short and Neut'l.	16.00 @	17.00	
No. 1 Stonecoal and Coke, Cold-short	_		١.
and Neutral	16,00 @	16.50	1
No. 2 Stonecoal and Coke, Cold-short		-	1
and Neutral	15.50 @	16.00	1
No. 1 Missouri and Indiana Red-short.	20.00 @		1
White and Mottled, Cold-short and	-		1
Neutral	13.00 @	15.00	1

#### 13.00 @ 15.00 CAR WHEEL AND MALLEABLE IRONS.

#### BALTIMORE.

Mr. W. N. WYETH, Iron and Steel Mer-chant, 46 and 48 South Charles street, re-ports us the following prices, under date of June 24: There is no improvement in the situation, and the market remains dull, dealers finding no encouragement in the demand to increase their supplies.

minute to mercuso their supplies.					
Refined Bar Iron, 1 to 6 wide by 36 to 1 thick	To	1.85	@	2	Ф
Refined Bar Iron, 1 to 4½ wide by 1½ to 2 thick	66	1.85	@	9	#
and Square	66	1.85			
Hoop iron, 11/4 wide and upward  Band Iron, from 11/4 to 4 in. wide	84	21/4	0	21	60
Horse-shoe Iron Norway Nail Rods	66	3 434	60	3%	9
Black Diamond Cast Steel, Flats, Squares and Octagon, ordinary		4/4	-	371	.,
sizes	66	13	@		
Machinery Steel	66	13 8 6	66	63	64
Homogeneous Steel Plate Common Horse Nails	66	7			
R. R. Spikes, 5½x9-16	ha	21/80	60	21/	10
" Mule shoes					

Commission Merchants, No. 23 South Frederick street, report the Pig Iron market as follows, under date of June 24: We quote present prices of Pig Iron and Blooms as fol-

lows; market du	ıll:
Baltimore Charcoal	l Pig\$26.00 @ 28.00
Virginia "	** 26.00 @ 28.00
	Ig.00 @ 20.00
14 No. 2	18.00 @ 19.00
11 No. 3	
" Mottled	and White 13.00 @ 14.00
Charcoal, C. B. Bloc	OMS 50,00 @ 52.00
" Bill	lets 52.00 @ 55.00
Refined Blooms	43.00 @ 45.00

#### FOREIGN.

#### FRANCE. (Montlew des Interets Materiels.)

PARIS, June 9, 1878.—Metals.—Business in general continues to insprove in this country; on the one hand there is the European Congress about to assemble, holding out the prospect of a prolonged and solid peace settlement, and the other the many orders they are giving extending to all branches of industry. Copper.—The visible supply in England and France is 41,365 tons, giving extending to all branches of industry. Copper.—The visible supply in England and France is 41,365 tons, giving extending to all branches of industry. Copper.—The visible supply in 1876. The price of the 1877 and 26,45 in 1877 and 26,55 in 1877 and 26,55 in 1878.

We have been firmer here, but the branches done has been moderate. We quote, deliverable at Havre, Chill Bars, 167,55 francs the collection, 175. Marseilles has remained steady; they quote Spanish, in slabs, 165; Red Tokat, 165; Small Refined Ingots, 175; Sheathing, 162; Bolta, 1975, and Yellow Metal Sheathing, 165. Tin.—The slatistical position, instead of improving is getting worse, and prices are sustained with difficulty in consequence. Visible supply in England and Holland 16,63 tons, 165; Marseilles in firm. They down first the service of the service

#### GERMANY.

(Borsenhalle).

GERMANI.

(Borsenhade).

Hamburg, June 8, 1878.—Metals.—Internal politics have assumed a most unpleasant complexion. What has happened since our last report spreads alarm and distrust, and exercises a depressing instituence on general trade. It is not to be supposed, however, that this state of affairs will extend beyond the time when a new Parliament will extend beyond the time when a new Parliament will regulate the modus operandi of the government in its war upon the socialistic element which surrounds us. Copper.—The market has been tolerably steady. The following are the quotations here: Drontheim, 75 © 76 marks the 50 kilos: Minnesota, 86; English, 60, 50 © 70; ditto Sheathing, 80, 50 © 81, and Yellow Metal ditto, 63 © 64. Berlin quotes English and Australian, 68 © 74, and Mansfield, 73, 50 © 74. Stettin quotes all sorts indiscriminately, 80. Tim is weaker. Berlin quotes Banca, 70 © 70, 50 marks the 50 kilos, and English Refined, 65, 50 © 67. We quote here: Banca, 74 © 75; English Common, 74 © 75, and Refined ditto, 76 © 77. Stettin quotes Banca, 76 © 77. Lead.—The production in this country is quite large, hence weakness has been all along the characteristic of our markets during the past month, extending to the first week of the current month. Berlin quotes Tarnowitz, Hartz and Saxonian, 16, 20 © 16, 50. We quote here as follows: English Pig. 19, 50 © 26, and Sheet, 20 © 21, 50; English White Lead, 28 © 32, and Dutch, 28 © 32 marks the 50 kilos. Spetter.—Although the stocks are by no means large, prices are upheld with some difficulty. Berlin quotes good quality Silesian at the works, 18, 50 © 16, 60 to arrive; W. H., 16,80, and Godulla, 16,80. Stettin wires, 21 © 21,50. In this city Silesian to arrive is worth 10,50 © 25; Light to Dark Gray, 25,50 © 26,00.

(Koch & Vlierboom.)

Countries.	9-9	March. 1877.	1876.	1878.	ree mo	x876.
Germany	240	223		680	766	
England	-49	55	247	23	106	753
Belgium	334	138	85		489	222
France		58	13	354		337
Hamburg		36	27	178	139	110
United States	30	10	27	170	117	
Oth. countr's.	32	16		46	55	15
Com country of	32	10	3	40	27	XI
Total, tons.	498	539	376	¥355	1600	1205
Lead is held h						

#### AUSTRALIA.

(Yorke Peninsula Advertiser.)

(Yorke Peninsula Advertiser.)

ADELAIDE, March 20, 1878.—Copper.—The Kurilla maine continues in a highly healthy condition, with haarty promise of a prospensus career. We had the pleasure of inspecting a fine rock of ore estimated to weigh about 8 cmt., consisting of 18 to 18 5 cmc, a little brother of the 15 cmt. rock sent to the Faris Exhibition, and which was from 3 to 4 5 richer. As for the Moonta mines the yield of are from these mines during the half year ended March 20 reached 10,272 tons of ore, averaging 29 5 of fine Copper. The proceeds from the sale of ore during the half year amounted to £74,672, against the working expenses of £57,607, showing a less of about £17,000, but as a set-off to this there are 4127 tons of ore on hand, valued at £39,496.

# Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

(From our Regular Correspondent.) LONDON, ENG., June 11, 1878. THE WEEK

has been quiet in most respects, but with a continue progress of the Conference negotiations that would appear to be of good augur for the early revival of trade. From all parts of the country current reports speak of the confident anticipations that are entertained as to a forthcoming change for the better, and from some quarters we hear of circumstances which tend to show how producers are endeavoring to turn the favorable change to account, by declining to enter into any long-dated forward engagements at the existing low quotations. Whether this tentative firmness will be maintained when the Congress shall have commenced its sittings at Berlin must necessarily remain to be seen. Probably there will be some little vacillation from day to day, but in the main most people appear to calculate upon an assured peace. Lord Beaconsifeld was heartily cheered by a great crowd of persons on leaving London on Saturday—a fact which is, to my thinking, typical of the general satisfaction felt and expressed at the conduct of the government throughout the Eastern crisis. There has been very like difference of satisfaction. has been some little difference of opinion on the subject, as a matter of course, but it has been merely assumed on political and party grounds in most cases. Personally I am acquainted with scores of liberals who heartily support the government on this

#### ANOTHER BLACK FRIDAY

has had to be chronicled since I last wrote. Last week Friday was signalized by the loss of the Grosser Kurfürst; this week has

to any particular day of the week, but I am bound to confess that my somewhat extended experience has clearly and unmistakably shown and proved that the majority of the eally great catastrophes of our social and industrial systems do actually take place on

#### AMERICAN GOODS

receive a further testimonial in the shape of a letter from Melbourne, Australia, published in the *Ironmonger* of June 3. The writer speaks out pretty plainly in support of his allegations against British locks, castings, rat traps, gas stoves and other articles, and warns the English manufacturers that they must alter their practices or be content to lose the trade. He places the American imports in very favorable contrast with ours, and says he has given orders for hundreds of pounds worth of goods to your makers. No doubt you will notice the letter itself, as well as the Ironmonger's comments thereon

ished business done in iron and steel, the total value of which last month was £1,733total value of which last month was £1,733-434, as compared with £2,136,566 in the same period of 1877, and £2,082,931 in 1876. The quantity of iron and steel also compares to disadvantage, last month's figures being 220,619 tons, whereas 251,114 were dispatched in May 1877, and 233,056 in the same month of 1876. The items in which increases are shown are: Manufactures of brass 2000 cuts, unwrought copper, 28 constants. increases are shown are: Manufactures of brass 2000 cwts.; unwrought copper, 28,000 cwts., chiefly to France; hardware and cuttons bar iron, £220; 1 ton sheet iron, £9; 90½ cwts., chiefly to France; hardware and cuttons bar iron, £550. Rangoon—64¾ tons bar iron, £550. Rangoon—64¾ tons bar iron, £338; 1¼ tons wrought-iron nails, £23; galvanized iron screws, £30; 32¾ tons galvanized sheet iron, £543; 24¼ tons steel, 40 tons; lead, 600 tons; seed oil, £23,000, and unwrought tin, 100 cwt. The chief decreases are: Arms and ammunition, 3600 in No.; gunpowder, 400,000 lbs.; wrought copper, 1000 cwts.; bar, rod, &c., iron, 1000 tons; railroad iron of all kinds, nearly 24,000 tons; wire, not tele-leave the strength of kinds, nearly 24,000 tons; wire, not tele-graphic, 1000 tons; hoops, sheets, &c., 1000 tons; tin plates, 1500 tons; cast and wrought iron, 7000 tons; unwrought steel, 6000 tons; steam engines, £7000; other machinery, £13,000; saddlery and harness, £2000; telegraphic wire and apparatus, £25,000; and unwrought tin, 2700 cwts. The special return as to iron and steel rails shows a falling of farce tors in the former

The special return as to from and steel rails shows a falling off of 7500 tons in the former and 20,000 tons in the latter as compared with the same month last year.

The actual number of small arms sent off was 20,581, and the quantity of gunpowder, 1,156,110 lbs.; manufactured brass, 11,113 cwts.; railway carriages, 3; railway trucks, 150; coal, coke, &c. 1,501,070 tons; un-159; coal, coke, &c., 1,501,979 tons; unwrought copper, 44,080 cwts.; wrought copper, 21,404 cwts.; yellow metal sheathing, 22,256 cwts.; hardware and cutlery, £265,-515 (value): pig iron, 93,261 tons (of which 3090 to the United States); bars, angles, bolts and rods, 22,380 tons (of which 190 to the States); railroad of all kinds, 40,463 tons (18 to the States); hoops, sheets, boiler and armor plates, 18,616 tons (68 to the States); in plates, 13,608 tons (894 to the States); cast or wrought, 19,650 tons (139 to the States); old iron, 5616 tons (105 to your country); unwrought steel, 2278 tons (503 to the States); lead, 4725 (31 to you); steam engines, £189,594 value (none to you); other machinery, £473,983 (£9246 to you); plated wares, £13,758; unwrought tin, 12,388 cwts. (1235 cwts. to the States); and zinc or spelter, 9652 cwts.

IN FURTHER DETAIL some of the leading items touched upon are as under for the month ending May 31: Hardware and Cutlery. Countries. 1876. 1877. Russia £13,572 £3,661 Germany 19,517 24,047 Countries.

Holland	9,086	9,044	8,15
France	11,414		12,10
Spain and Canaries	11,671	13,445	8,75
United States,	24,439	20,828	20,23
Spanish West India Is	4,926		11,490
Brazil	21,664		19,41
Argentine Republic	7,281	4,784	7,650
British North America.	18,749	20,816	13,398
British India	25,827	26,550	22,48
Australia	30,653	40,336	46,648
Other countries		85,018	71,893
Total	£303,413	£296,392	£265,510
Unwrot	ight Ste	el.	515
Countries	1876.	z877.	1878.
France	263	258	279
United States	750	722	503
Other countries	1,592	1,870	E,497
Total, tons	2,605	2,850	2,278
	Plates.	-1-5-	-,-,-
Countries.	1876.	1877.	1878.
France	Sx2	865	398
United States	7,285	10,472	8,994
British North America.	924	1,054	600
Australia	32x	433	369
Other countries	2,770	2,293	3,247
Total	12,112	15,117	13,608
Machinery-No	t Steam	Engines.	21
Countries 18		1877.	1878.
Russia £123		£54,477	£109,616
Germany 6	5,364	53,498	57,834
Holland 10	3,549	14,899	19,527
Belgium 2	7,458	23,986	18,217
	5, 107	77,501	63,213
Spain and Canaries. 2	<sub>1</sub> ,698	30,053	13,233
Egypt	4,985	6,543	5,618
	5,273	18,287	9,240
British India 5	1.917	50,957	36,797
Australia 2	8,588	25.722	27,747
Other countries 100	5,668	130,972	112,941
Total£53	5,532 A	486,895	£473,983
SCOTON	DIG TD	146	

SCOTCH PIG IRON has been brisker, in consequence of the development of a decided disposition to specu-

Writing from Glasgow, June 8th, James Jatson & Co. said: "During the past week watting from Glasgow, June Stn., James Watson & Co. said: "During the past week the market improved in price with a considerable speculative business done; since yesterday, however, a reaction has set in. really great causarophes of industrial systems do actually take place on the Friday. I could give you fully a score instances in support of this allegation were any good purpose to be served by so doing. As this could hardly be the case I will content myself with remarking that this explosion adds to my previous conviction that there is not one absolutely safe lamp in existence. The Davy, Stephenson and some others may do well under ordinary conditions, but all fail when the foul gas is of more than customary density. In this opinion I have the concurrence of some of the best practical men of the day.

AMERICAN GOODS

On Monday the price advanced from 49/10½ at 50/3, cash, on Tuesday it opened quietly at 50/1½, improved to 50/4½ and closed at 50/1½,

G. M. B., at Glasgow	No. z. N
Gartsherrie, "	
Coltness, "	
Summerlee, "	
Langloan, "	
Carnbroe, "	
Calder, at Port Dundas	87.6
Glengarnock, at Ardrossan	66/
Egiinton,	
Dalmellington. "	
Shotts, at Leith	50/
Kinneil, at Bo'ness	397
****	

The figures of John E. Swan & Bros. and William Colvin & Co. are similar.

Last week's shipments from the Clyde in-

cluded the following: From Glasgow to Shediac—145¼ tons iron castings, £800. New the board of trade returns for May have just been issued, and do not compare to advantage with those for the corresponding part of last year. The total value of our exports during the month of May was £15,165,075, as against £17,461,139 last May, and £17,055,504 in May 1876. This shows a serious aggregate falling off, much of which is attributable to the diministration of the state of the diministration of the state o tons wrought-iron tubes and fittings, £95; 18½ tons sheet iron, £180; 50¾ tons bar iron, £320; 2 tons iron rivets, £22. Kingston (Jamaica)—5¾ tons cast iron, £58. Java—3½ tons castings, £100; 62¾ tons bar iron, £495. Honolulu and Portland (Oregon)—¾ ton wrought-iron rails, £6; ½ ton wrought-iron tubes, £8; 2 tons iron castings, £15; sugar-making machinery, £12,227; 51½ tons iron tubes, £8; 2 tons £13,237;  $5\frac{1}{4}$  tons iron tubes, £85; 39 tons bar iron, £85;  $6\frac{1}{2}$  tons sheet iron, £70; 17½ tons hoop iron, £150; unenumerated wrought iron, £29; 27 tons galvanized iron manufactures, £457. Vienna—32 tons naildeaux (via Ardrossan)—6½ tons wrought iron, £133; 1¼ tons iron water meters, £70. Rouen (via Workington)—10 tons iron tubes, £200; machinery, £60. Antwerp—2¾ tons wrought-iron tubes, £35; sewing machines, £200. The amount of manufactured iron exported from Glasgow last week was:
Bar, 308 tons; hoop, 31 tons; rod, 32 tons; sheet, 58½ tons; wrought, £34 and 32½ tons. Total, £34 and 462 tons. Same period last year, 65½ tons. From Greenock to last year, 65½ tons. From Greenock to Porto Rico—Wrought-iron work, £475. Molde—Steamengine and boiler, £320. From Grangemouth to Palma (Majorea)—2 tons cast-iron pipes.

THE CLEVELAND IRONMASTERS

monthly returns show an increased production as thus detailed: The make of Cleveland pig iron for the month ending May, 1878, in the port of Middlesborough, was 100.085 tons, or in the district, 140, 102 tons from 78 furnaces—an increase upon April, 1878, of 3295 tons. The make of other kinds of iron (including hematite and spiegeleisen) on the month ending May 37, 1878, was, in the district, 26,501 tons from 17 furnaces, a decrease upon April, 1878, of 1366 tons. The total make of May, 1878, was 165,603 tons from 95 furnaces, an increase upon April, 1878, of 1929 tons. The shipments, foreign, of pig iron from port of Middlesborough were, in the month ending May 31, 1878, 34,753 tons, as against the corresponding month last year of 31,176 tons, or an increase upon May 327 of 327 tons. The shipments coastwise of pig iron from port of Middlesborough were 39,290 tons in the menth ending May 31, 1878, against 35,846 tons in the corresponding month last year, menth ending May 31, 1878, against tons in the corresponding month last year, or an increase upon May, 1877, of 3444 tons.

Makers' stocks of Cleveland iron on April 30, 1878, were, for port of Middlesborough, 176,402 tons, and the total district, 220,350 tons, while on May 31, 1878, the former 160,608 tons, and the latter 203,184 tons, a decrease upon April, 1878, of 17,166 tons.

1878, 70,925

1878, 70,925 tons; in makers' stores, April 30, 1878, 50,108 tons, and on May 31, 1878, 49,849 tons. The abstract of these statistics shows an increase in make of Cleveland iron upon April, 1878, of 3295 tons; decrease in makers' stocks upon April, 1878, of 17,166 tons; decrease in stock in public stores upon April, 1878, of 1215 tons; decrease in stock makers' stores upon April, 1878, of 259 ns. The total number of furnaces was 95 in and 70 out, as against 112 in and 47 out in May, 1877.

#### THE TRADES OF SHEFFIELD

are in much the same condition as when last reported upon. All the heavier branches are quietly engaged, especially those devoted to the production of merchant iron, for which the demand is very poor in the district, and the outside competition for shipping orders exceedingly keen. Common bars such as william Cooke's, can be had at prices ranging from £5. 12/6 @ £6. 5/; sheets at very little over £7 up to £7. 10/; and hoops at £3. 10/ @ £9. For good boiler plates, such as John Brown's and Cammell's, there is a as John Brown's and Cammeir's, there is a fairly steady sale, and I hear that the Park-gate Company are developing the same branch of their business with encouraging success. At Elsecar and the Midland Iron Works, angles, frame plates and miscellaneous engineering and agricultural ironwork are selling pretty well. The Bessemer works are all fairly active, not only in respect of st that Coal has touched bottom in France.

BELGIUE.

Of the Grosser Kurfürst; this week has been made memorable by another terrible colliery explosion in the Lancashire district. Connal's stores now hold 175,807 tons, a the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England has been so contained the Charlerof district to England

and save considerable weight. Fender manufacturers are also using Bessemer sheets manufacturers are also using Bessemer sheets for bottoms and for fire-irons. In the cast-steel industry there is little news. Some of the older houses, being excessively "stiff-backed" as to prices, are letting much of the current business slip by them into the hands of newer and more enterprising firms. There is one particularly notable example of this which I cannot very well more closely identify, but which is that of a house (well known on your side) which has closed two departments rather than work them at redepartments rather than work them at reduced figures. In the file trade there is a good deal of irregularity, some manufactur-ors being very busy indeed for India, the Cape and Australia, while others (chiefly doing a home business) are complaining strongly of the absence of orders. The saw manufacturers are not busy, but there is said to be some little movement in the Russian market, for which very heavy stocks have accumulated. There is a moderately good turnover in respect of best and common cut-

#### STAFFORDSHIRE AND BIRMINGHAM!

are also doing no great amount of business in the ordinary iron branches, although a few of the best houses continue well en-gaged on government work for the arsenals, gaged on government work for the arsenals, dockyards and shipbuilding shops. Several good commissions for chains, anchors, &c., have recently been placed with makers in the Dudley and Tipton localities. At Willenhall government orders have been given for curry combs, and at Walsall for saddlery and harness, both classes of goods being and harness, both classes of goods being partly intended for home military use and partly for the increased volunteer strength of the Cape forces. It is mentioned that the so-called Pittsburgh tacks lately used at Walsall are in reality made at Birmingham. I have this statement from a gentleman actually engaged in the trade. At the same time there is no doubt that several kinds of American hardware are in daily use, not only in Staffordshire, but in other parts of the country. At Birmingham most of the lighter trades are pretty well employed, and in some orders are now being filled which are stated to have resulted from the Paris Exhibition.

#### SOUTH WALES AND MONMOUTHSHIRE

do not furnish any particular news this week. In all cases there is a decided disposition to alter iron-works machines, plant, so as to adapt them to the manufac-plant, so as to adapt them to the manufacture of Bessemer or Siemens steel. It is very justly argued that South Wales and Monmouthshire are peculiarly well situated for the development and successful carrying on of the steel trade, inasmuch as they have superior shipping facilities for importing Spanish, Irish, or Mediterranean ores, have coal which is better than any other in the country, have cheaper labor than other dis-tricts, and being close to the seaboard can ship the finished articles with ready and cheap facility. All these advantages will tell in the long run, and should enable the district to outvie Sheffield and all the inland

have experienced an appreciable amend-ment during the week, but at the time of writing there is next to no ousiness doing, owing to the general coservance of the Whitsuntide holidays here and throughout

Whitsuntide houses the country.

The Ironmonger says: "Copper has been decidedly stronger this week, with an attendant augmentation of quotations. Of Chilean regulus, 1100 tons sold at 12/9, viz., tons on the spot, and 725 tons to arrive Chilean regulas, 1100 tons sold at 12/9, viz., 375 tons on the spot, and 725 tons to arrive at Swansea. The demand for Chili barshas expanded, and a large quantity has changed hands at a further advance, best brands at £64. 10/@ £65. 10/, cash; favorite marks, £63. 15/@ £65, ditto; specials, £65. 10/; but chiefly good ordinary brands at £62. 10/@ £64. 10/, cash, and at £64 @ £65. 5/ for arrival. Charters of Chili for the second half of May were 2050 tons, viz.: 1650 tons bars and ingots, 400 tons fine furnace stuffs. half of May were 2050 tons, viz.: 1650 tons bars and ingots, 400 tons fine furnace stuffs, all for U. K. Of Wallaroo no sales are reported, but a good business has been done in Burra at £71. English is dearer: tough, £69 @ £70; best selected, £70 @ £72, and strong sheets, £76 @ £77. Tin has shared the better feeling of the market, and prices improved early in the week, although there has since been a slight relapse. About 200 tons have changed hands at £61. 5/ @ £62. 15/ for Australian, and £63, Straits. Twenty tons Straits for distant arrival also went off quotations are well maintained; indeed, in one or two instances advances of a shilling per box have been demanded and obtained. Lead is quiet at former prices—£16. 15/ @ £17 for English pig, and £16. 7/6 @ £16. 10/ for soft Spanish without silver. Spetter is also inanimate at £17. 12/6 @ £17. 15/ for erdinary, and £17 net at Swansea for soft English V and S. There were on the 1st inst. 161 tons of this metal in London, 167 tons in Hull, and 230 tons in Grimsby, total 1498, as against 951 tons same date last year. Zinc as before. Antimony and Quick-silver unchanged."

Thirty-seven firms, located in different parts of the oil country, and embracing all those engaged in the manufacture of oil-well tools from the upper to the lower district engaged. district, announce that on and after June to they will sell their goods only for cash on delivery. Commenting upon this, the Titusville Herald says: There is no break in their ranks and no dissenting voice. The evils of the credit system are so widespread that this step has become necessary, and the cash system will work good not only to the trade, but to the producer as a class. The facility of giving district, announce that on and after June 10 ducer as a class. The facility of giving and getting credit has stimulated production and offered a premium not only to financial looseness, but to actual dishonesty. The cash system will make all more conservative

#### INDUSTRIAL ITEMS.

#### MAINE.

The repair shops of the Maine Centr Railroad Company, which for years have been located in Augusta, are to be shut down in a few days. The machinery, &c., is to be removed to Waterville, where all work of that description will hereafter be

The Humphrey Machine Company, Keene, have recently shipped a lot of barrel machinery to Germany on orders, and a set of clothes-pin machinery to the Provincial Reformatory of Canada, and home work is reported much more abundant than last They are now making a 5-foot tur-vater wheel for John Chace & Son, of bine water wheel for John Chace & Son, of Webster, Mass., and a 5½-foot wheel for the Richmond Paper Mill, at Lowell.

#### TERMONT

The Howe Scale Company are fast removing their property from Brandon to Rutland. Several car loads have already gone, and there are many more to follow. The molders have already stopped working in Brandon, and in a few days the other men

#### ASSACHUSETTS.

The machinery in the mill of the Agawam Iron Works, Wareham, has been so changed that the same amount of work is successfully done with less than half the amount formerly used.

The Chase Manufacturing Company of Orange have a fair prospect for summer work, though the sale of machinery, shaftwork, though the sate of machinery, and ing, &c., is now less active than early in the spring. They received week before last an order for all the machinery for a large lumber mill at Livermore, N. H., and shipped a 54-inch water wheel and other works to a

a 54-inch water wheel and color mill in Maine.

Mr. Frederick Atkins cut 92 kegs Iod. nails in five days last week, at the works of the Mount Hope Iron Company, Somerset.

#### CONNECTICUT

The failure of Langdon & Co., the iron manufacturers, at Chapinville, on the Housatonic Railroad, with liabilities of \$100,000. has made a great excitement at Great Barrington, where, among other creditors, the Mahaiwe national bank is involved to the extent of \$28,000. It is said that they will be able to pay no more than 10 cents on a dollar.—Springfield Republican.

A pistol firm in Norwich has received a

large contract from the Russians. The Hazard Powder Company of Hazard-ville have discharged about a dozen hands,

and are shutting down Fridays and Satur

#### NEW YORK.

The Rensselaer Iron and Steel Company Troy, are busy in all departments, except in the nail and spike department, in which they are doing very little. Their horse-shoe department is gradually increasing in pro

The Burden Iron Works, Troy, are doing very heavy business in horse shoes. a very heavy business in horse shoes.

Their improved shoe is taking very well, and they are receiving large orders from the New York city and California markets.

Of their two blast furnaces but one is in

The two blast furnaces of the Jagger Iron

Company, Albany, are out of blast.

The commissioners of the new capitol at Albany have awarded the contract for five hydraulic-power elevators to the Howard Iron Works of Buffalo. Four of the elevators are for passengers and one for freight. The amount of the contract was \$25,025, exclusive of the inside finish of the cars.

The Rome Rolling mills are to run day and night on a large order. Over 100 tons of machinery and fire-brick

has arrived for Bowen & Signor's new roll-

has arrived for Bowen & Signor's new rolling mill, at Saranac.

On Thursday last the Albany and Rensselaer Iron and Steel Company finished forging a round steel shaft 22 feet and 9 inches long by 6½ inches in diameter, weighing 2347 pounds. It was made to the order of the New York and Lake Champlain Transportation Company for a propeller shaft. The forging was accomplished by an 8-ton steam hammer from an ingot inches square. This is the largest shaft the Albany and Rensselaer Iron and Steel Company have yet made, but not the heaviest forging. Steel forgings are demanding a large share of their attention, and they are putting in several new hammers, one of which, a 4000-pound helve hammer, is now

#### being built at the Cuyahoga Works, Cleve-land, Ohio. NEW JERSEY.

The Newark Journal says: Mr. Oscar Barnet, manufacturer of malleable and gray iron castings, at the corner of Hamiland McWhorter streets, has been busy for the past two months, running full time, with 120 employees. A specialty is in brass-molders' flasks, which are sent to Cleveland and other cities in Ohio, Boston, Chicago and all the large cities of the United States, and to many places in Canada. This is the only factory in the country that makes a business of making these flasks. A makes a pusiness of making these flasks. A patent porcelain-lined lemon squeezer made here squeezes the lemons for the punch made in London, and for the lemonade of all the realms of the Kaiser Wilhelm. During the month of May 100 dozen of these little articles were sent to London. Mr. Barnet makes large quantities of castings for the toy trade. Another specialty is a patent folding. trade. Another specialty is a patent folding rack with five double hooks, that can be folded so as to put in the pocket, and yet each hook is strong enough to bear a man's. weight. These are sent in large quantities to South America and Japan. The egg-beater "Best of All," is made by Mr. Barnet. He has recently supplied the Central Park Muwith seven tons of Gavitt's patent shelf seum with seven tons of Gavitt's patent shelf brackets, and anticipates a second order from that place soon. He also made the brackets now in use at the Smithsonian Institute, Washington, and within a month the Mu-seum of Natural History, Boston. On Mon-day of this week he filled a large order for the Museum of Comparative Zoology, at Cambridge Mass. Washington, and within a month the Museum of Natural History, Boston. On Monday of this week he filled a large order for the Museum of Comparative Zoology, at Cambridge, Mass.

The Tomlinson Spring Works at Newark employ from 70 to 80 hands, supplying, be-

sides Newark carriage makers, Brewster & Co. of New York and other leading firms in that city, all of whose springs they make.

In a busy time the works turn out 250 to 300 pairs of springs per week.
F. B. Kuehnhold & Co., Newark, manu-F. B. Kuehnhold & Co., Newark, manufacturers of bits, buckles and coach and carriage hardware, have made and sold more goods this year than last, but the margin of profit has been lower, so that they have not made any money. Their trade is almost exclusively in gold, silver and nickel-plated goods.

At the Paxton Rolling Mill, in Harrisburg, a plate of iron 65 feet in length, 20 inches wide, three-eighths of an inch in thickness and weighing 1300 pounds, has been turned out for the purpose of exhibition in the pa-rade on the 4th of July in that city. Mr. A. Bates Grubb, of Mount Hope Fur-

nace, has in contemplation the erection of

are now receiving.

Messrs. Heebner & Sons of Lansdale have

just sent ten car loads of their famous horsepower threshers and cleaners to Amherst, Nova Scotia. This firm are now sending to the Southern States on an average two

machines a day.

Magnetic ore has been discovered one a tract of land owned by Adam H. Schwartz and John Kissinger, on Mount Penn, about half a mile north of "Drenkel's Field." The ore was found at a depth of about 40 feet from the surface, and the vein is believed to be about 3 feet thick. The premises have been leased to John Withers, who is engaged in digging a new shaft.

The rolling mill at Brownsville has com-nenced running double turn.

The coke ovens formerly operated by T. W. Watt & Co. at Dunbar are now idle.
We clip the following from the Sharon
Herald of the 21st inst.: At the Westerman mill, puddle, guide and hoop mills double turn; bar mill single; sheet mill off one day; nail factory still off, but the hot machines are still going. Blast furnace No. 1 is blown to the property of the formace hours are still going. out for repairs. This furnace has made a good record for Mr. Walker, the foundry-man; the blast lacks a week of 21 months' duration, and the books show a yield of a nice fraction over 21,000 tons of iron in that period. During the big railroad strike the furnace was off ten days, which, consider-ing the time consumed in getting ready to dampen down, and the time used in slow running after the blast went on, it would be safe to call two weeks' lost time. This is sate to call two weeks lost time. This is certainly a good general average. Work will be commenced on it as soon as it is cold enough. No. 2 working off smooth and even, as usual. At the Kimberly Mill, old hoop, guide and puddle mills double turn; bar mill single turn; new hoop mill still off; puddle mill and nail factory off Saturday, on account of changing the supply of steam account of changing the supply of steam of the ore pulverizer for fix from the mill boilers to the ones at the blast furnace. Nothing special from the Stewart Works; same as last week; still running, still ship-ping iron, and still wearing a general look of contentedness. In West Middlesex, at the mill six furnaces on six beaters day the mill, six furnaces on, six heats a day and selling the muck iron as fast as made

Another furnace going on this week. At Greenville the mill, all but the puddle de-partment, is in operation. This works hinges on the Atlantic Works, in Sharon; they sink or swim together.

In the Titusville Machine shops, unmarried men are allowed to work but half time There is but one furnace in blast in New

The stove foundry of Orr, Painter & Co., at Reading, which has been running steadily since the late reduction, will shut down on Saturday, the 29th inst., for a period of shows in weeks. about six weeks.

The National Locomotive Works at Con nellsville have shut down.

The puddle mill of the Co-operative Iron Works, Danville, which had been idle for some time, started on Tuesday, the 18th inst.

A. G. Green, Esq., of Reading, bought the Bernville Machine Shops at sheriff's sale for

\$5750.

Twenty-seven thousand tons of iron ore the Cumberland Twenty-seven thousand tons of iron ore reached Harrisburg over the Cumberland Valley Railroad last year, from the mines owned by the Reading Company near Boiling Springs, Cumberland county.

Neafie & Levy have shipped a large marine boiler to Jacksonville, Fla. The firm are also constructing a 15-ton ica-making machine to

constructing a 15-ton ice-making machine to zo to Bolivia, South America.

Ten car-loads of threshers and cleaners, manufactured in Lansdale, Montgomery county, were shipped from Philadelphia to the extreme head of the Bay of Fundy last

The Pennsylvania Steel Company, of Har risburg, have within the last 18 months re ceived 26,726 car-loads of material from the Pennsylvania Railroad. The usual number of cars received per day is from 80 to 100; largest number received in one day, 156. A large proportion of these are sent out laden productions—rails, large and small brooms, billets and railroad supplies. with frogs, brooms, billets and railroad supplies. The largest day's shipment of rails during

the period was 800 tons.

Pott & Bro., boiler makers, of Lebanon, have contracted with the government for the construction of 300 buoys to be used on the Delaware and Hudson rivers.

#### PITTSBURGH AND VICINITY.

Messrs. Lewis, Oliver & Phillips have engaged in the manufacture of steel wire, similar to that made by Anderson & Passavant for the bridge now in course of erection over the East River between Brooklyn and New York.

The South Side coal firm of Joseph Keeling & Co. has been merged with the Birmingham Coal Company, limited, recently organ-

Duncan & Sons, of Tenth street, South

The repairs at Richards, Hartley & Co.'s works, Pride street, Pittsburgh, are about completed, and they will be ready to start in

few weeks. Mackintosh, Hemphill & Co., Pittsburgh hipped to the Cambria Iron Company, at Johnstown, recently, a large bloom shear for the Cambria Company's new blooming mill. The shear is designed to cut steel

blooms 8 inches square.

Kirkpatrick, Beale & Co., of the Leechburg Iron Works, manufacturers of all grades of fine sheet irons, tin and terne plates, &c., are running their works day and night, and selling all of their products that they can make. No coal is used in the pudthey can make. No coal is used in the pud-dling or heating furnaces or under the boilers in these works, natural gas being the only fuel employed.

The iron and steel manufacturing firm of

Reese, Graff & Woods, of Pittsburgh, closed their works on Tuesday night, 18th inst., owing to financial embarrassment, and will another furnace somewhere along the line not start them again till some arrangement of the Lebanon Valley Railroad. of the Lebanon Valley Railroad.

The fork and shovel factory of Myers & Ervin in Cheltenham require their force of men to work until 9 o'clock in the evening so as to fill the advancing orders that they a time without compensation in the event of the resumption of work. The liabilities are something over \$400,000. The plant repre-sents an investment of over \$500,000, and there are other large assets, such as stock in various stages and good accounts, showing a large and active business. The firm also have large orders and contracts which promise a remunerative business for the

#### VIRGINIA.

The Richmond Stove Company, of Richmond, has been reorganized by the addition of new stockholders and capital. The high reputation for superior work enjoyed by this company has secured to it a large field of operations, the prosecution of which will now, with the increased facilities, be vigorously entered upon. Mr. James M. Talbott is president and Mr. H. Clay Chamblin secretary of the company. eretary of the company.

OHIO.

We take the following items from the Youngstown Register and Tribune of June 20: Brown, Bonnell & Co., are running full with the exception of the puddlers, in all departments of their mills. Cartwright, McCurdy & Co's. finishing mills have been running double turn all week. On Monday next all departments of both mills will be started double turn. There are good pros-pects of running steady all summer. The seven and eight-inch finishing mills at the Youngstown Works have been running double turn. The squeezers of this mill, broken a week ago, have not been repaired, and will not be before the middle of the week. The United States Iron Co., manufacturers of cotton ties, of which Councilman Francis Miller is superintendent, is working full might and day, giving employment to 70 men and boys. This week they shipped 18 cars of finished ties to the South. These works are located about 100 yards east of the Youngstown Rolling Mill, and have been in operation about four weeks. Arms, Bell & Co.'s nut and bolt factory is running full time, and all are busy manufacturing ma-chine bolts and bridges. They employ about 75 hands. At Wm. Tod & Co.'s machine shop several machinists are kept busy. They have just finished a large order of cotton tie dies for J. Painter & Sons, Pittsburgh. The dies for J. Painter & Sons, Pittsburgh. The Morse Bridge Works, under the supervision of Mr. Julian Kennedy, present a lively appearance. They employ 35 hands and have at present 27 orders for their bridges. They have already made one bridge, and next week will begin putting another together. Only one of the Himrod furnaces is working. The machine shop of Booth, Miller & Co. is running full tilt. The foundry is working about half time. Altogether our cities' industries may be said to be in good shape. The puddlers at Brown, Bonnell & Co.'s are idle, as before stated, but there is the utmost good feeling existing between is the utmost good feeling existing between them and the company, and outside mal-contents cannot disturb this harmony. The company's position is that they have shut down their puddling department for the reason that the price of iron will not justify keeping it going. There is no dissatisfac-tion with the men, and no controversy about

The Union Steel Screw Works, Cleveland, are running on eight-hour time, with 60

men and 100 girls employed.

Taylor & Boggis, Cleveland, makers of light gray iron castings, have 130 workmen employed on full time. They have lately been compelled, through increase of business and for want of room, to lay a brick floor on the second story of their building, which is used for an additional molding room.

The American Cast Steel Company are receiving numerous flattering reports in regard to the high quality of their product and assurances of large orders when stock hand are worked down. Meantime stocks on

are making about 1500 pounds of steel per day.—Cleveland Trade Review.

The South Cleveland Advocate says: On Tuesday, the 18th inst., the rail mill commenced working three eight-hour turns per day, thus giving employment to one-third more men. This arrangement will be ad-hered to through the hot summer months.

The Worswick Manufacturing Company brass and pipe works, at Cleveland, are working full time, with 50 workmen, and all

the orders they can attend to.

The following items are from the Akron
Beacon of June 12th: Very fine and superior machinery is now being placed in the Cuyahoga Paper Company's new works at Cuyahoga Falls. When the new mill is in operation its capacity and general product will be second to none in this part of the world

Many of the departments of the Buckeye Works are now running on extra time, ow ing to the unparelleled press of orders. An additional 150 harvesters will yet be manufactured this season, and 300 table rakes have just been ordered, making 900 more

have just been ordered, making 900 more than are usually put up.

Messrs. Camp & Babb, of Cuyahoga Falls, were yesterday awarded the contract for constructing the new building at that place for Messrs. Turner, Parks & Co., and to be occupied by Mr. P. H. Standish in the manufacture of saddler's hardware.

The King & Keymer Machine Company.

The Klotz & Kromer Machine Company,

of Sandusky, are making large numbers of turbine water wheels for the Tornado Wheel Co. of Bellevue. This wheel is made under patents granted to Mr Shirk, and although new, has already received high testimonials The Klotz & Kromer Company are also making under their own patents the Hero Reaper. This is their first season. At a recent trial 20 acres was moved by a Hero Reaper in 12 hours.

Messrs. R. B. Green & Co., about June 1. commenced operations in the manufacture of boilers of all kinds at No. 88 East Front St., Cincinnati. They are at this time quite busy, having about twenty boilers to complete between now and Sept. 1. They are now putting in a set of rolls 7 feet 4 inches in length for rolling boiler iron. These are said to be the largest rolls used in the city for that purpose. for that purpose. They also build the Whitwell hot-blast stoves, and attend to all kind of work pertaining to the erection of blast furnaces. They will largely increase the present capacity of their works during this year in the way of tools of the most ap-

proved patterns.

The Revolving Scraper Co. of Columbus are now manufacturing a fine contractor's plow as a companion to their revolving scraper, which is highly spoken of. This company report frequent inquiries for their goods from Central and South America, and have made recent export shipments to England, Germany and other foreign countries. Their patent folding garden barrow is very popular on account of its convenience for packing for shipment.

#### GEORGIA

The Cherokee Furnace, in Polk county has been delayed in starting again, but will now be in blast in a few days (cold blast). Their car-wheel iron is being introduced and gives entire satisfaction, being strong and possessing a superior chilling quality. They also make a hot-blast iron which is valued by foundrymen on account of its special softness and strength. This furnace pays special attention to the careful grading of liron.

#### KENTUCKY.

The Louisville Rolling Mills are still idle. These mills—the Kentucky and Louisville were consolidated some time ago, and are complete in machinery in excellent running order. Capitalists desiring to engage in the manufacture of best grades of merchant iron, light and heavy shafting, &c., could find special inducements to invest at these

The Licking Furnace at Newport is running steadily, making a soft and fluid iron for foundry purposes, especially for stoves, with mixture of strong brands of pig or scrap.

The Licking Rolling Mills are running as usual on superior brands of merchant bar,

#### heavy and light shafting, &c. MEBRASKA.

The Omaha Nail Works, we notice by the Bee of that city, is at last an actuality. A stock company has been organized, a board of directors chosen, and the following officers elected; president, G. T. Walker; vice-president, G. W. Lininger; secretary and treasurer, C. B. Birkett; surperintendent, R. W. Wilson. The president, secretary and superintendent were appointed a committee to conclude arrangements for the location of the works, the erection of necessary buildings, the purchase and transportation of machinery, &c. Active measures will be taken from this time forward, says the Bes, and the works will be put in operation as soon as men and means plish it.

#### MISSOURI.

The Lone Elm Mining and Smelting Co at Joplin, have just completed four new blast furnaces, which will give the works the capacity for smelting obout 100,000 pounds of mineral per day, or 700,000 pounds per week, when run to their full capacity. To keep the smelting works in constant opera-tion, the company have made arrangements to smelt the ore of several other mining companies besides their own. This large addition to the smelting capacities will compet the White Lead Works to increase their capacity if they continue to utilize all the smoke of these furnaces.

#### KANSAS.

The new zinc works of Robert Lanyon & Co., at New Pittsburgh, will be ready for operation in a few days. The works will start with a smelting capacity of 12 tons per day, which will be doubled in the course of the work. Then will sempley from as to so the year. They will employ from 35 to 50 hands. The power will be furnished by a 50 horse-power engine, which is already in running order.

#### MICHIGAN.

The following, from the Marquette Mining Journal, is a statement of the lake shipments of ore and pig metal in gross tons for the season up to and including Wednesday, June 19:

3,011 1,329 766

Total... .....135,490

31,725

3,179

Champion 16,9			7
Keystone 7		Total	
FRO	M L'	ANSE.	
Michigamme			. 8,596
Stewart			. 1,130
Total			. 9,726
			. 912
FROM	BSC.	ANABA.	
		NA 1 - 11	
Jackson 19,0		Mitchell	
South Jackson 3.59		Cambria	1,118
New York 7.5		Goodrich	
Cleveland 1,1	B4   ]	Bessemer	
Angeline (hard) 10,30	6x 2	Smith	
(hematite) 1,30	03 7	Vulcan	10,803
Barnum 8,4		Quinnesec	8,143
Saginaw 22,0	04	Breen	680
Salisbury 13.5		Cleveland (hem'te	1,498
Palmer 3,20		Emmett	. 716
Michigamme 4,8	28	Howe	791
MICHIGANIAN (	- 1	N Vork (homatite)	T 405

Pig Iron.

..... 9,077 Quartz,

Carp River Iron Co.....

How Iron is Introduced into a New Office Building."-The building just commenced for the Morse estate on the site of the old Park Hotel, corner of Nassau and Beekman streets, will in several respects be a remarkable structure. The materials will be wholly of brick and terra cotta, without any stone for sills or lintels, or even for the foundations. The effect in color externally will all be in red and black, as introduced in segmented arched windows, ornamented courses or an occasional pattern, and in the cornice. The walls will rise on a "stepup" with splayed footings, from a foundation of concrete 2 feet deep and 8 feet wide, diminishing from 4 feet in the sub-cellar and basement through the eight upper stories to 16 inches at the top. The floors and roof will all be sustained by iron beams, those for the former 15-inch, and the partitions will be of angle iron covered with iron lath. The ceilings, too, will be of iron lath, attached to the floor beams by Hoyt's patent corrugated iron, forming an arch between the several beams, filled in above with concrete. The aim is to erect a structure absolutely fire-proof. The first floor will be adapted to banking purposes, and all above, on either side of a spacious central hall, will be subdivided into smaller offices. By means of an open shaft with fixed tackle in the roof, safes can be removed; the hoist covers are to be of illuminated tile, Dale's patent. There will be two elevators; heat will be sup-plied by direct radiation in each apartment, and a tank near the roof, with driven wells in the cellar, in addition to Croton, will fur-nish water. The structure will be finished next April at a cost of \$175,000.

Torpedoes and Ammunition for Russia—We learn on apparently good authority that on Saturday last a contract was closed for 50 Lay torpedoes for Russia. Negotiations have been pending for some time, and the result just noticed having been reached with deliberation, is all the more significant as to the probabilities of continued peace in Europe. As a single tor-pedo of the Lay pattern costs \$15,000, the amount involved is about \$750,000. Reference was made in our last issue to a ship-ment of about 80 tons of rolled cartridge metal on Russian account from the brass works of Brown Bros. in Waterbury, Conn. This is understood to be the second or third already made under a contract closed a few months ago, the whole covering some 6000 tons, to be delivered in the course of three years. The steamer John Bramhall is at New Haven awaiting orders for the transportation of war material to Constantinople. What will be done with the installment of arms due under the old Henri-Martini contract with the Providence Tool Co., or for shell and cartridges from the Winchester Repeating Arms Co., is not yet known.

Boiler Explosion at the Chesapeake Nail Works—Four large boilers in the puddle mills of the Chesapeake Nail Works, Harrisburgh, Pa., exploded June 25th with tremendous force. The mill was almost en-tirely demolished. Chambers Bowermaster, a foreman, was horribly mangled and instantly killed. Henry Nair, John Hess, George Frank and John Hetrick were badly scalded and injured by falling debris. One of the boilers was carried over an adjoining mill 65 feet in hight, and landed in a field about 350 feet from the scene of the explo-sion; another was blown through the top of the mill into a brick warehouse; a third was carried into another warehouse, badly damaging the building; and the fourth boiler was entirely torn to pieces. The loss is esti-mated at from \$12,000 to \$15,000. The nail and plate mill was but slightly damaged. Operations in these departments can be resumed in a week or ten days. No cause can be assigned for the accident.

Bids for the last River Bridge Superstructure.—It was stated last evening at the office of the Brooklyn Bridge Com-pany that no contract had yet been awarded on the bids for ironwerk of the superstrucon the bids for ironwork of the superstruc-ture opened a few days ago. No. 1, New Jersey Steel and Iron Company, 17 Burling Slip, N. Y.; No. 2, Edgemoor Iron Com-pany, Wilmington, Del.; No. 3, Kingston Bridge Company, Pittsburgh, Pa.; No. 4, Clark Reeve & Co., 410 Walnut street, Phil-adelphia; No. 5, Leighton Bridge Company, Rochester, N. Y. The award will probably

Burning of the New York Flow Co.'s Works.—The entire works of the New York Plow Company, at Newark, together with the machinery, were destroyed by fire on the 23d inst. The loss is estimated at \$100,000; insurance, \$50,000. The company in a circular state that most of their patterns, the accumulation of 50 years, were in a fire proof building and are not injured. As there are many goods on hand the interrup-tion of business will be slight. Reconstruc-tion will begin at once with improved ma-chinery. Plans for the future will be defin-itely known to-day.

The Sheffield correspondent of The Engineer tells the following queer story as to the ways of local workmen: A leading manthe ways of local workmen: A leading manufacturer, suspecting that there was a waste of power in his establishment, came down to his works one morning at the unexpected hour of 7.30. His great "wheel," which supplies power to all his grinders, begins to revolve in time for the men to commence work at eight. At eight o'clock there was nobody there. Fifteen minutes later one or two strolled in; at 8.30 a few more; and they continued to come in, in twos and threes, at 8.45, 9, 9.15, 9.30, 10, 10.30, and 11 o'clock. He was annoyed. The loss of power was to him a very serious consideration. He put up a netice that in the future the wheel would not furnish power till three-fourths of the men were in attendance. Did the notice bring them all to the place at 8! Not a bit of it. The men looked at the notice, quietly put their coats on again, and walked out of the place!

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Heel and Toe Plates, Steel Shanks, and Fancy Head Nails, Silver or Japanned Lining and Saddle Nails, A full assortment always on hand at salesrooms, for immediate delivery if required. Odd and Irregular Sizes made to order or cut from sample at short notice. Send for Price List.

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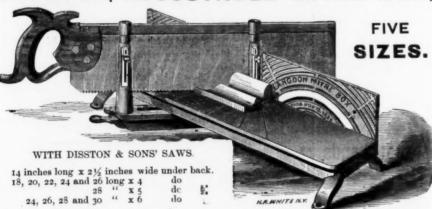
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THE

# NOVELTY WRINGER.

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MANUFACTURED BY

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Butchers' Choppers, Axes and Hatchets, Grub Hoe and Mattocks Till Picks Sox Chisels and Scrapers

Aze Eye Bush Hooks, Watt's Ship Carpent ars' Toois, Coopers' and Turpentine Tools, FOR SALE BY Carpenters' Drawing Knives.

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L. COES'

# WRENCHES.

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We invite the particular attention of the trade to our New Straight Bar Wrench, widened, full size of the larger part of the so called "reinforced or jog bar." Also our enlarged jaw, made with ribs on the inside, having a full bearing on the front of bar (see sectional view), making the jaw fully equal to any strain the bar may be subjected to.

These recent improvements in combination

with the nut inside the ferrule firmly screwed up flush, against square, solid bearings (that cannot be forced out of place by use), verifies our claim that we are manufacturing the strongest Wrench in the market.

We would also call attention to the fact. that in 1869 we made several important improvements (secured by patents), on the old wrench previously manufactured by L. & A. G. Coes which were at once closely imitated and sold as the Genuine Wrench by certain parand sold as the Genuine Wrench by certain par-tics who seem to rely upon our improvements to keep up their reputation as manufacturers, and although the fact of their imitating our goods may be good evidence that we manufacture a superior Wrench, we wish the trade may not be deceived on the question of originality. Trusting the trade will fully appreciate our recent efforts, both in improvements on the Wrench and in the adoption of a Trade Mark, we would caution them against imitations None genuine unless stamped.

"L. COES & CO."

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The Best Rapid Adjustable Vise in the Market.

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TACKLE BLOCKS HOC RINGER RINGS and HOLDER. only double Ringe





30

HOG AND PIG

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#### What an Earthquake is Like.

A correspondent writing to a friend in Montreal from Caracas, May 2, gives the following additional interesting details of the late earthquake shocks:

We had on the 12th April, about 8.40 p. m.,

about as lively a shake as I want to experience. I first heard a loud, rumbling noise, and then it seemed a 1000-ton engine was and then it seemed a 1000-ton engine was rushing over the pavements, and then a scream like a hundred engines run mad, and then the house began to shake and the floor began to rise up, and about that time I was out in the open yard. There were a few risings in the floor of the yard, and all was ever so far as Caracas was concerned. A few pictures and mirrors fell to the ground in some of the houses. In the cathedral an in some of the houses. In the cathedral an image or two fell down—and nothing more. But the town of Cua—about twelve miles from here, a beautiful and flourishing place, was by the same shock entirely destroyed. was by the same shock entirely destroyed and from 300 to 400 lives lost. Our President has sent money, provisions and troops to the place, and has done everything possible to alleviate the sufferings of the people. His wife, "Nina Belen," and family rushed nto the plaza and had tents put up, and for many days slept therein. Thou sands of people left town that day; in fact, all that could; the rest slept in the plaza, some in tents and on cots, but the majority on the benches and on the sidewalks, and for a few days the appearance of the city some in tents and on cots, but the majority on the benches and on the sidewalks, and for a few days the appearance of the city was really ludicrous—every park, square, wide street or open space was filled with tents, and the middle of the streets with soldiers under arms. Mosqueria's coffee yard, the one you visited while here, was filled with people—100 to 150—sleeping there nightly for a week or more, some on the bare ground and some under tents, and the tents were wonderful to behold, both there and in town. Tents, shanties, gypsy encampments, tents of canvas, white, striped and speckled, of calico, of coffee bags, of old sheets and of paper—anything answered. Finally things became more quiet. We had daily shocks, but light ones; people began to sleep in their houses. Holy Week came on and church processions also. In one procession a woman became alarmed and screamed, and immediately a stampede began to the cry of "Temblose," and then women and children were crushed and injured by being trampled upon and one woman killed, but there was no Temblose. The President issued an order stopping processions and closing the churches until Easter, and on Sunday, the 28th, at 8.30 o'clock, while the fashionable church of Alta Gracia. ter, and on Sunday, the 28th, at 8.30 o'clock, while the fashionable church of Alta Gracia, just above my house, was filled to the utmost, came another severe shock and stam-pede. Women with long trains fell and were trampled on and hurt, and among the men were thieves, who wrenched off ear-rings, bracelets, chains, &c. And that was all for Caracas. Not so, however, with the town of Ocumare, about the same distance from here as the ill-fated Cus. Ocumare had the best part of the town destroyed viz. all the best part of the town destroyed, viz., all the fine houses, while the cottages of the poor were saved.

### THE PERFECT SASH TIGHTENER AND LOCK.

Ir n, Burglar Proof, Anti-Rattling, Draws Sash to Exact Center, No Springs to Get out of Order. The Best in the Market.

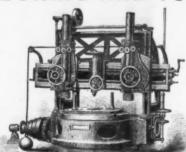
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For either Wire or Rope Line, ly hold any article, from a silk handkerchief article can be blown away. Does not soll the contract by CLARK & SMITH, Patentees, Chester, Orange Co., N. Y.
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ed for Circular work, either concave or convex
ks on a straight line or in any degree of circle
to thirteen inches in diameter. Both ends ar
i simultaneously with one hand and issandly
d at any decired degree of circle without resor
alow manipulations of a fine threaded serve is
g the changes. If desired the connecting plate
detached, when the ends will act independ
and can be adjusted to different curves, as is
imms necessary on secial work, such as Stai

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On receipt of list price we will send to any in the United States, by mail, postage paid, found in our list excepting Nos. 5, 6, 7 and 8, eding too heavy will be expressed on same as. Always order by list number. Send for ed Price List. Address.

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to the superior con Its working parts are absolutely pro-tected from dire and chips. It is strong compact and durable, and will hold the greatest variety of work, as the jaws range the full diame

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#### To Merchants, Manufacturers and Bankers:

We are now preparing, and shall issue during the first ten days of July, the forty-third semi-annual volume of our Reports. We submit this edition with confidence, as it has been revised with unusual care and at great expense. We are determined to spare no effort to make our work complete, comprehensive and reliable; and to this end we have perfected many improvements which will appear in the July volume, but which have never heretofore appeared in any Commercial Reports. In anticipation of the repeal of the Bankrupt Act, we have compiled an abstract of the Collection Laws of the several States, which we shall print under the proper headings. The compilation of these laws has been made by representative attorneys in each State, and may be relied upon. We believe this feature will be appreciated by all who have occasion to grant credits covering different sections of the country. Inasmuch as our books are published quarterly, we shall be able in future to give any amendments to these laws down to the very latest date.

We have also introduced under each town or village head, concise information, show ing its actual or relative position-whether on a railroad, steamboat or stage route-the population, and whether a telegraph, express or money-order office. As a Shipping Guide, this will be almost invaluable, it being more comprehensive, and we intend that it shall be more reliable, than any published otherwise. We have also tabulated the Banks and Bankers throughout the United States and Canada, giving their capital, etc., as well as their New York correspondent, which we shall publish as an appendix to each volume, r New York correspondent, which we shall publish as an appendix to each volume, the names as they appear at present under their respective town or in the regular volume.

These improvements are but an index of what we intend to do for our patrons in the average to \$7.50 a month for conductors and \$5 for brakemen.

The present rate of wages in the various in the various and \$5 for brakemen. retaining, however, the names as they appear at present under their respective town or

from Montreal to New Orleans, we are able to control it in all its branches, so that it is not possible for the interest of our patrons to suffer from conflict with local managers.

#### To our Subscribers we furnish:

- 1. The use of our Book of Reports, carefully revised, and issued quarterly, giving the name, business, estimated worth and credit of Merchants, Manufacturers and Banks in the the United States and Dominion of Canada. Under each State head, an abstract of its collection laws. Also under the town heads, the location, whether on a railroad or stage line, the population, and whether a telegraph, post office money order and express office. Also a tabulated list of the Banks and Bankers of the United States and Canada, as an appendix; and at a small additional cost, Pocket Editions of single States, for the use of Commercial Travelers.
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- 4. Promptly any information reported to us, impairing the credit of their customers we having previously received a list of the same.
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- 5. A Letter of Introduction, to enable them to receive the benefit of the Records at any of our offices in the States represented in the volumes loaned, which, in conjunction with the Pocket Editions, are of great benefit to Commercial Travelers.

Relying solely on the merits of our work, we respectfully solicit an examination of our system, with the assurance of our ability to substantiate all we claim, and with the knowledge that it is worthy of your earnest consideration.

Mr. J. H. Winser, our consul at Sonneberg, in the Prussian province of Brandenburg, writes as follows:

Mr. J. H. Winser, our consulat Sonneberg, in the Prussian province of Brandenburg, writes as follows:

In the Sonneberg Consular District, embracing the Thüringian Duchies and Principalities, which cover an area of 3300 square miles (English) and contain a population of over 1,000,000 souls, the wages paid to day laborers of every class are as follows, the amounts given in United States coin: Agricultural laborers in villages, per day, males, not found, 28 to 48 cents; females, 24 to 28 cents; males, found, 16 to 20 cents; females, 8 to 10 cents. Day laborers in towns, per day, males, not found, 50 to 55 cents; females, 25 to 37½ cents; females, found, 112½ to 25 cents. Railway station laborers and those employed on public works, not found, 40 to 57 cents.

Laborers, male and female, living in villages in the neighborhood of towns, earn the same wages as those who live in towns, always finding employment in the latter.

In summer the working hours are from 6 a. m. to 6 p. m. During this time there are three rests allowed, half-an-hour in the afternoon, for the purpose of taking food. Ten hours are a day's work. For three months of the summer, when there is an average of 16 hours of daylight, laborers make overtime and are paid therefor from 5 to 7 cents an hour.

In winter the working hours are necessarily shorter and wages are reduced from 10 to 30 per cent. For instance, the burgomaster at Coburg employed 200 laborers during the winter and early spring of this year in laying out and grading an addition to the city cemetery, and paid each man a daily wage of 26 cents in United States coin, upon which to keep body and soul together.

Working on Sundays is quite the rule. Railway station laborers (freight handlers and car shifters) on the Werra Railroad, which is a private corporation, are compelled to be on duty from 5.30 a. m. to 10.30 p. m., working more or less during all these 15 hours. as the demand for their services pre-

to be on duty from 5.30 a. m. to 10.30 p. m., working more or less during all these 15 hours, as the demand for their services pre-

hours, as the demand for their services presents itself. On the State railways wages are much higher.

It may not be amiss in connection with the foregoing to add a statement showing the average wages in the Thüringian States paid for a day's work at the principal trades and occupations.

The piece-work system, however, is generally followed, and, in this case, the earnings average about 20 per cent. more.

ings average about 20 per cent. more.
Cabinet makers
Carpenters 0.55 @ 6234
Blacksmiths 0.55 @ 6234
China ware makers-
Molders and chief decorators 1.50 @
Decorators 0.75 @ 98
Formers and turners, males 0.75 @ 98
" females 0.36 @ 60
Firemen 0.60 @ 75
Packers 0,50 @ 60
Day laborers, males 0.40 @ 60
" females 0.36 @ 45
Doll and toy makers, males 0,49 @ 98
remaies and children 0.24 @ 49
Glass makers 0,50 @ 75
Glaziers 0,60 @ 86
Gun makers
Kid glove makers, males 0.50 @ 75
females 0.24 @ 36
" machine sewers 0.33 @ 50
Lamp makers
Masons and bricklayers
Paint makers 0.30 @ 50
Papier mache workers, males 0.50 @ 55
Polishers (French) 0.70 @ 75
Railway conductors, exclusive of uni-
form and mileage 0.45 @ 50
Railway brakemen 0.40 @ 45
" switchtenders 0.45 @ 50
" telegraph operators 0.75 @ 80
Tailors 0.45 @ 50
Tobacco pipe makers, males 0.50 @ 95
Tobacco pipe makers, males 0.50 @ 95 females 0.25 @ 95
Unhalsterers 0.24 @

It will be seen by this statement that the

food is rye bread and potatoes. He is, per force of circumstances, a vegetarian in diet, as all his forefathers were. He rarely eats ers having decreased their stocks materially ers having decreased their stocks materially ers having decreased their stocks materially.

meat at all in any other form than sausage, and his wife and children scarcely know its taste, so little do they get of it.

The ordinary bill of fare is rye bread and chicory coffee, without sugar, for breakfast; rye bread, without butter, for lunch; potatoe soup, potatoes, rye bread and homemade cheese with a glass of shin beer, for dinner; again rye bread at four o'clock in dinner; again rye bread at four o'clock in the afternoon, and still rye bread and beer in the evening. There is little variety in this standard fare, except on Sundays and festival days, when, perhaps, sausage is substituted for the cheese, more beer is consumed, and a few eggs and a potatoe-salad are added to the evening meal. The laborer himself, without exception, is in the habit of taking a dram of spirits more or less often during the day, but drunkenness is an uncommon vice. From immemorial ages the Thüringian workman—be he a day laborer, a mechanic or a manufacturer engaged in any of the cottage industries-has laid the greatest value upon the control of a piece of ground, either as owner or lessee, which his wife and children may cultivate while he is CHARLES F. CLARK, President. with and children may cultivate while ne is employed at his calling. This plot of garden or field not only supplies him with potatoes and other vegetables, but generally enables garrison towns of Thuringia during the employed at his calling. This plot of garden or field not only supplies him with potatoes and other vegetables, but generally enables garrison towns of Thuringia during the employed at his calling. This plot of garden or field not only supplies him with potatoes and other vegetables, but generally enables garrison towns of Thuringia during the employed at his calling. This plot of garden or field not only supplies him with potatoes and other vegetables, but generally enables

INCORPORATED 1876. Labor, Wages, Trade and Finances in Brandenburg, Prussia.

Mr. J. H. Winser, our consulat Sonneberg, of Brandenburg.

Brandenburg of Brandenburg.

Brandenburg of Brandenburg.

Brandenburg of Brandenburg. garden consist only of a stony acre on a steep hill side and is capable of yielding potatoes, it appears to be sufficient to tide the family of a laboring man over the oft-recurring periods of lack of work which have marked recent years, and at no time is its cultivation

recent years, and at no time is its cultivation neglected.

In order to possess this mainstay of a garden, the married workman, although employed in the town, prefers to live in the country, and spends an hour or more every morning and evening in walking between his cottage and place of occupation. This cottage, it must be said, is always of primitive construction, with unsightly wattled walls, and seldom contains more than two small rooms and a kitchen, and is furnished in the barest manner. For such a shelter and the garden plot the rent is from \$12 to \$15 per annum, unless the occupant happens to own the property, which not unfrequently is the case. There is poverty in superabundance in the workman's home, often verging upon squalor; his children are generally ragged and barefoot, his wife looks haggard and weary of her lot, but cases of absolute destitution are uncommon. The unmarried laborer fares somewhat better than the man of family; he usually finds a lodging in the town if his occupation takes him there, and pays for his bed, a breakfast of coffee and black bread, and very plain dinner, at the rate of 25 to 30 cents per day. His supper he provides for himself at a beer house.

The following statement shows the present average retail prices (reduced to the United States currency) of what are usually termed

average retail prices (reduced to the United States currency) of what are usually termed the necessaries of life, although most of the articles enumerated are only exceptionally to be found on the table of the laboring man. The quantities are given in German pounds (1/2 kilto), and a German pound is equal to I I-10 lb. avoirdupois. Where a liter is the measure used, it is equal to 1 1-18 liquid quarts:

	Cents per po	und.
.	Apples, sliced	14
. 1	Bread, white	9
١,	Bread, white	4
-1	Butter	32
ιl	Cheese Swiss	0.4
	" each, hand kase Brandy, 48 per cent. trollers, per liter15 @	2
П	Brandy, 48 per cent. trollers, per liter 15 @	20
1	Colfee, Java, raw	22
:	" roasted	28
1	Chicory, substitute for coffee	6
-1		U
. 1	Grains, &c. :	
. 1	Barley, large	5
. 1	" hulled	614
-1	Rice, Java	6
- (	" broken	5
	Flour, white	7
	Farina	7
	Oatmeal	8
-1	Potatoe meal	7
- 1	Vermicelli	9
-1	Peas, hulled	5
-1	Beans, white	
- 1	Lentils	474
-1	Herrings, Scotch, each	236
- 1	Horrings, Scotch, Cach	279
- 1	Meats:	
- 1	Beef15 @	16
- 1	Veal	14
- 1	Pork16 @	17
- 1	Mutton	7.4
	Milk, per liter 4 @	
	Oil, salad, poppy20 @	22
	" " olive 30 @	22
	" rape seed, refined	33
	" petroleum	* 1/2
-	Alcohol per liter	572
	Alcohol, per liter 20 @ Potatoes, per 5 liter 614 @	25/
	Sugar, refined loaf	772
	powdered	13/2
-	" crude brown	12
	Salt coarse	II.
- 1	Salt, coarse	3/2
- 1	Starch 9 @	
-1	Soda, washing	3
	Soap 8 @	1256
-1	Sauer kraut 3 @	31/2
1	Eggs. each	3
	Candles, stearine	
	" tallow	14
1	Vinegar, per liter	. 5
	Coal perton	B
	Wood, hard, per cubic meter 4.25 @	5.00
	" pine " " 2,25 @	3.00
	Wood, hard, per cubic meter 4.25 @ " pine " 2.25 @ Fowls, old, each. 25 @ Pigeons, per pair 20 @	.40
	Pigeons, per pair	.22
9	E-continue in the case of many	
OK 1	Excepting in the case of meats and a	TOW

Weavers.

It will be seen by this statement that the daily rate of wages in this district are fabulously small in comparison with those paid to craftsmen and employees in the United States, and that the amount paid varies very little in the different trades and occupations. There can be no question that, speaking in general terms, the quality as well as the quantity of the work of the German artisan is inferior to that produced by the American. The workman here is inclined to sluggishness, and what he accomplishes is relatively small.

Railway conductors and brakemen on the Werra Railway receive mileage in addition to their regular wages. This mileage amounts on the average to \$7.50 a month for conductors and \$5 for brakemen.

The present rate of wages in the various mechanical occupations is from to 15 per cent. lower than in the year 1876, and is about as high as that paid for some years prior to 1873.

It may be easily imagined from the figures which show the earnings of the laboring and manufacturing classes of Thüringia that the workman's daily fare is of the simplest sort, and that his life is at best a struggle for existence for himself and family. His principal folion is rye bread and potatoes. He is, perforce of circumstances, a vegetarian in diet, as all his forefathers were. He rarrely eats

existing fright at recent fatal cases of trichi-nosis in various parts of the country. But the high price has little influence upon the the use of meat.

Comparisons have been made as to the cost of the necessaries of life as far as the data could be obtained, and with reference to the wages paid during the past five years the maximum was reached in 187.7-76, since which time, on account of the dullness in business, the price paid for labor has fallen on an average between 10 and 20 per

PRESENT STATE OF TRADE AND FINANCE FRESENT STATE OF TRADE AND FINANCE.

From all the indications now visible it does not appear that trade will be able very soon to shake off the incubus which has depressed it for so many years. An improvement is scarcely to be expected until the European political horizon becomes clearer. Industrial establishments in this region are now filling the comparatively small orders. now filling the comparatively small orders which were given in the early spring, but great complaint is made of the low prices which are obtained for goods, and which, from necessity, must be accepted. In fact the manufacturers are producing at unprofitable prices for the most part in order to keep their hands employed and their ma-chinery in operation, hoping for an improve-ment in affairs as the season advances. The bulk of the orders to the trade in this district is given after the Eastern fair at Leip-sie, which is just about to close, and it would therefore be premature, at this moment, to

therefore be premature, at this moment, to express a positive opinion upon the prospects of business during the summer.

At present the daily reports from the exchanges in the principal financial centers of Germany tell of small transactions and a general tendency to refrain from engagements for any extended period. The public has become very cautious, and will only invest in first rate securities. The returns of the great railway commanies for the first

nas become very cautous, and will only invest in first rate securities. The returns of the great railway companies for the first quarter of the year show again diminished receipts, both for goods and passengers, and the stockholders in some cases will receive no semi-annual dividend.

The "Reichsbank" and seventeen private banks are at present entitled to issue 100, 200, 500 and 1000 mark notes, as well as 5, 10, 20 and 50 marks. According to the bank act of March 14, 1875, the issue of notes uncovered by bullion is limited to \$65,192,000 for the "Reichsbank," \$26,448,000 for the seventeen private banks, total, \$91,650,000. The actual issue of notes, both covered and uncovered, was on April 1, 1878, \$198,375,000, against an amount of bullion and coin in the cellars of the banks of \$148,487,000, which against an amount of bullon and com in the cellars of the banks of \$148,457,000, which shows that 75 per cent. of the issued notes were covered by bullion. Besides the abovementioned bank notes there are \$28,56,000 of state notes (Reichscassenscheine) of 5, 20

of state notes (Reichscassenscheine) of 5, 20 and 50 mark denominations in circulation. The coins of the German Empire are of gold, silver, nickel and copper. All the gold coins, according to the law of July 0, 1873, are of one purity—nine parts of pure metal and one of copper alloy. Out of 500 grams of pure gold are coined 6034 20-mark pieces, or 139½ 10-mark pieces, or 279 5-mark pieces. All the old German gold coins were demonetized on April 14, 1874, and have not been redeemed since July 1 of the same year. All the German silver coins are also of one purity—nine parts of pure silver and one of alloy. Out of one pound of pure silver is coined 20 5-mark pieces, 50 2-mark pieces, 100 1-mark pieces, 200 50-pfennige pieces. The nickel coinage consists of 10-pfennige and 5-pfennige pieces, each containing 25 parts sixely and 5 parts.

The nickel coinage consists of 10-pfennige and 5-pfennige pieces, each containing 25 parts nickel and 75 parts copper.

The copper or bronze coinage is confined to pieces of 1 and 2 pfennige, which contain 95 parts copper, 4 parts tin and 1 part zinc.

The entire amount of the imperial silver coinage is limited by law to 10 marks (\$2.38) per head of the population, and the issue of nickel and bronze coins shall not exceed 2½ marks (59c.) per head. Nobody is compelled to take in payment more than 20 marks (\$4.76) in silver and 1 mark (24c.) in nickel and bronze, excepting only the imperial and state treasuries, which must receive the silver coinage to any amount which may be offered.

The small coins of the old thaler currency

The small coins of the old thaler currency have been already demonetized, but the cur-rency reform is still incomplete, and will rerency reform is still incomplete, and will remain so until the thaler pieces are called in from circulation. The imperial chancellor is empowered by law to call in the old thaler coins to any amount which may appear to him advisable. Until this is done the thaler is declared to be worth three marks, and remains a legal tender. Prof. Soetbur of Hamburg, an authority in finance, estimates the amount of thalers still in circulation to be not less than \$71,400,000. The conversion of this large sum into the proper currency will this large sum into the proper currency will enhance the cost of money reform to the empire by many an additional million of marks

As to the relation of paper money and coin to each other, it may only be said that as the entire note and coin system is based upon the gold standard the bank notes are at par are required to redeem the same with gold

The Phonograph at Paris.—Next to the great World's Fair I think Edison's phonograph is probably coming in for the per lb.; 1378, 14½ cents per lb.

The extraordinarily high price of meat at present is attributed to a scarce supply, farmers having decreased their stocks materially during the past few years in consequence of the continued distrust which has prevailed in political and commercial affairs, and the markets are now affected as a result of the course of the stock raisers. The price of pork has fallen lately in consequence of an existing fright at recent fatal cases of triching the political and compared to the pork has fallen lately in consequence of an existing fright at recent fatal cases of triching the political and compared to the pork has fallen lately in consequence of an existing fright at recent fatal cases of triching the profoundly impressed the Parisians. It seems they did not believe it until they saw they had heard about it, but, strange as it may seem, the larger part of the French people had looked upon it as a sort of Yankee joke. It is stated that when ment, went before the Academy with it, the savans actually refused at first to credit it. savans actually refused at first to credit it. the high price has little influence upon the cost of living of the laboring classes, simply vestigate it by themselves, thinking that ne vestigate it by themselves, thinking that ne was reproducing the reply from the instrument by the aid of ventriloquism. When the use of meat.

The price of the following enumerated articles per hectoliter (equal to 2 bushels and 3.35 pecks American standard measure) in the markets of the eleven garrison towns of Thüringia during the years 1873–1875 has averaged:

Wheat.

Wheat.

Standard measure) in the markets of the eleven garrison towns of Thüringia during the years 1873–1875 has averaged:

Wheat.

Standard measure) in the price of the eleven garrison towns of the markets of the war wild with excitement over the marvel ous invention, and sent the thanks of the whole body to the inventor. The phonograph is on exhibition at "la Salle des Capucines," a building near the Boulevard des Capucines, and crowds are seen wending their way to it daily. I stepped in for a few minutes, but the crowd was too great to get near to the instrument. It sounded very queer to hear it talking French; it was doing a little "blowing" on its own account, for I heard it say in good French: "Lephonographe est marveilleux. C'est un grand in-

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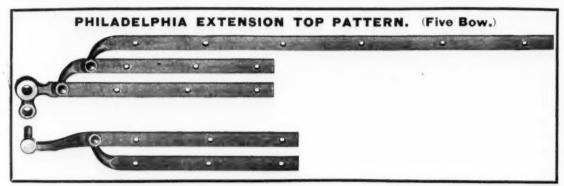
SMITH'S FORGED SLAT IRONS.

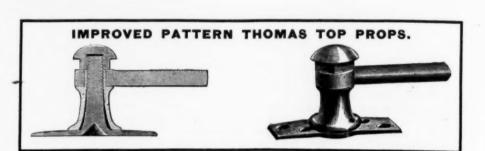










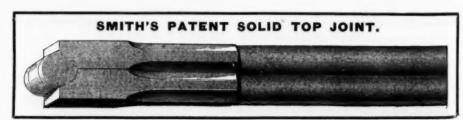




THOMAS PATENT TOP PROPS.







See Illustrations on the two pages following this.

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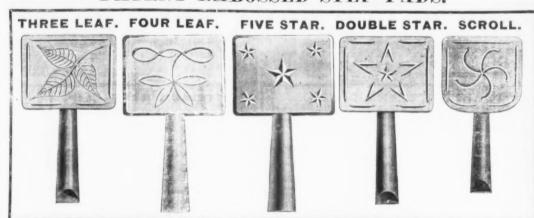
GRIDIRON.

PATENT CROSS BAR.

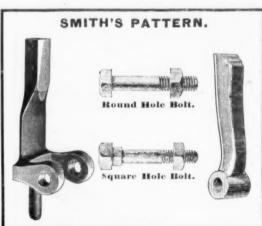
PATENT EMBOSSED STEP PADS.

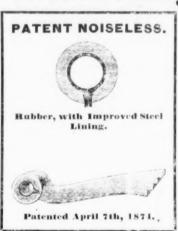


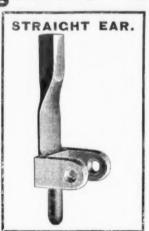


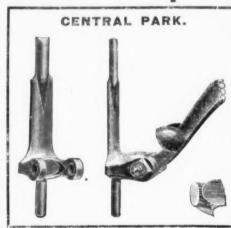


Smith's Interchangeable Shaft Couplings.

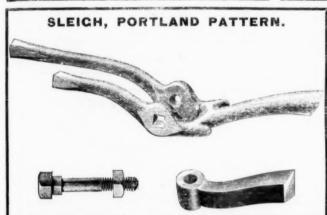


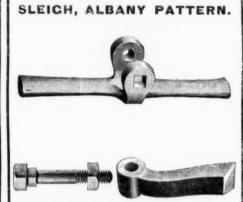






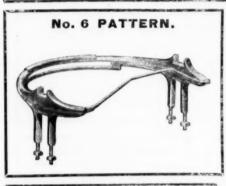


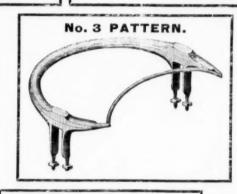


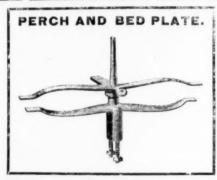






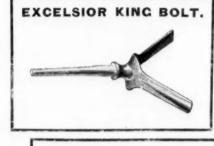






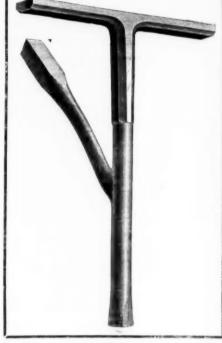






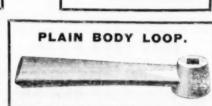


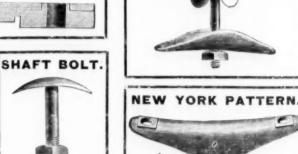
HEAD BLOCK PLATE.

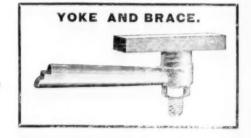




LIP BODY LOOP.







See Illustration on the preceding and following page.

# H. D. SMITH & CO.,

MANUFACTURERS,

# Plantsville, Conn.,

AXLE AND SPRING BAR CLIPS. OFFSETS AND STAY ENDS. SADDLE CLIPS. COACH AXLE CLIP. POINT OCTACON OFFSET. PLAIN PATTERN. (5-8 in. wide.) AXLE SADDLE. DOUBLE POINT PATTERN. (5-8 in. wide.) PLAIN OCTACON OFFSET. PLAIN PATTERN. (7-8 in. wide.) OCTACON. PLAIN PATTERN. (Edge View.) PLAIN PATTERN. (1 in. wide.) OVAL PATTERN OFFSET. SOLID DOUBLE. "ANVIL" PATTERN. (7-8 in. wide.) HEAVY AXLE CLIP. (3-8 in. Shank.) ROUND PATTERN OFFSET. BREWSTER PATENT. EXTRA HEAVY AXLE CLIP. (7-16 in. Shank.) POINT OCTACON FRONT STAY END. SKELETON. SMITH'S SPRING BAR. PLAIN OCTACON FRONT STAY END. PLAIN SPRING BAR. ROUND FRONT STAY END. AMERICAN COACH CLIP. ROUND BACK STAY ENDS. -SPRING CLIP. FRENCH COACH CLIP. OVAL FRONT STAY END.

See Illustrations on the two pages preceding this. For description of the above and other popular Forged Carriage Irons, send for 1877 Illustrated Price List.

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Millers Falls Mfg. Co., 74 Chambers, N. V.	Furnaces, Makers of. Richmond & Potts, 119 S. Fourth, Phila., Pa. 5 Furniture Springs. Carey & Moen, 23 W. 29th, N. Y. 3 Haigh Loyd J., 51 John, N. Y. 2 Galyanized Japan.
Blocks, Tackle, Makers of. Burr & Co., 31 Peck Slip, N. Y. 25 Penfield Block Works, Lockport, N. Y. 41 Providence Tool Co Providence, R. I. 41	Lefferts Marshall, Jr., oo Beekman, N. V.
Blowers, Makers of. Keystone Portable Forge Co., Philadelphia	Grant Fan Mill and Cradle Co., Melrose, Rensselaer Co., N. Y
Bolt Cutters. Howard Iron Works, Buffalo, N. Y	
Eagle Bolt Works, Philadelphia	Coper & Holle, Brooklyn, N. Y. 37 Wilson & Hughes Stone Co., Cleveland, O. 37 Wilson & Hughes Stone Co., Cleveland, O. 37 Wood Water R., 285 and 285 Front, N. Y. 37 Worthington & Sons, North Amherst, O. 37
Boot and Shoe Heel Stiffeners. Lyon N., Albany, N. Y	Windmulier Louis & Roelker, 20 Reade, N. V.
Brass Butts, Makers of.	Gunpowder, Makers of. Kneeland F. L. (Dupont) 70 Wall, N. Y
Brass, Manufacturers of.  Ansonia Brass and Copper Co., 19 Cliff, N. Y.  Bridgeport Brass Co., Bridgeport, Conn. 2  Brass Goods Mig. Co., 289 Pearl, N. Y. 2  Davol John & Sons, 100 John, N. Y. 2  Holmes, Booth & Haydens, 49 Chambers, N. Y. 2  Holmes, Booth & Haydens, 49 Chambers, N. Y. 2  Miller Edw. & Co., 30, Warren, N. Y. 2  Plume & Atwood Mig. Co., 80 Chambers, N. Y. 2  Scovill Mig. Co., 42 Broome, N. Y. 3  Waterbury Brass Co., 26 Broadway, N. Y. 3  Brass Fanaders.	Biglin Philip S., 100 Chambers, N. Y. 0 Graham & Haines, 113 Chambers, N. Y. 38 Salomon L., 100 Chambers, N. Y. 11 Samuel S. L., 57 Cedar, N. Y. 3 Tennis & Wilson, 81 Beekman, N. Y. 12 Walbridge G. B. & Co., 83 Reade, N. Y. 35
Davol John & Sons, 100 John, N. Y. Holmes, Booth & Haydens, 49 Chambers, N. Y. Manhattan Brass Co., 83 Reade, N. Y.	Samuel S. L., 57 Cedar, N. Y
Miller Edw. & Co., 35 Warren, N. Y. Plume & Atwood Mfg. Co., 80 Chambers, N. Y	Hardware Dealers.  Brower John I. & Son, 288 Greenwich, N. Y
Reeves Paul S., Philadelphia44	Hardware Importers.  Boker Hermann & Co., 101 Duane, N. Y.  Tring, British & Co., 256 Broadway, N. Y.  If Van Wart, Son & Co., 134 and 136 Duane, N. Y.  Windmulter Louis & Roelker, 20 Reade, N. Y.  20
Bridge Builders. Moseley Iron Bridge and Roof Co., 5 Dey, N. Y 4 Buck Saws.	Van Wart, Son & Co., 134 and 136 Duane, N. Y
Boynton E. M., 80 Beekman, N. Y	American Spiral Spring Butt Co., 82 Beekman, N.Y.44 Clark & Co., Buffalo, N. Y
Butcher and Shoe Knives, Manufacturers of, Wilson John, Sheffield, England	Cowles Hardware Co., Unionville, Conn
Stanley Works, New Britain, Conn. 12 Union Mrg. Co., 98 Chambers, N. Y. 7	Hovd, Supplies & Watton, 52 market St., Phila., Pa.37 Miller's Falls Mfg. Co., 74 Chambers, N. Y
Victor Sewing Machine Co., Middletown, Conn13 Carriage Bolts, Makers of. Townsend, Wilson & Hubbard, Philadelphia12	Hardware Manufacturers. American Spiral Spring Butt Co., \$2 Beekman, N.Y., 4 Clark & Co., Buffalo, N. Y., 32 Coulter, Flazler & Co., \$2 Chambers, N. Y., 32 Cowles Hardware Co., Unionville, Conn. 13 Enterprise Mg. Co., Phila. Hart, Bliven & Mead Mg. Co., 107 Chambers, N. Y. Lloyd, Supplee & Walton, 653 Market St., Phila., Pa.37 Miller's Falls Mg. Co., 24 Chambers, N. Y., 25 F. Blies Mg. Co., 24 Chambers, N. Y., 35 R. Blies Mg. Co., 30, New York St. Blies Mg. Co., 108 Russell & Erwin Mg. Co., New York Shepard Hardware Co., Buffalo, N. Y., 35 Stanley Works, New Britain, Conn. 12 Union Mg. Co., 30 Chambers, N. Y., 7 Van Wagoner & Williams, 82 Beekman, N. Y., 44 Hardware Specialties.
Union Mg. Co., 98 Chambers, N. Y. Calipers, Victor Sewing Machine Co., Middletown, Conn 13 Carringe Bolts, Makers of. Townsend, Wilson & Hubbard, Philadelphia 12 Carringe Hardware, Makers of 13 Smith H. D. & Co., Plantsville, Conn 28, 29 & 30 Topliff & Ely, Elyria 13 Carringe Springes, Doxter Springes, Poxter Spring Co., Hulton, near Pittsburgh, Pa. Rome Trestle Co. (Limited), Rome, N. Y 12 Car Axles 12	Union Mrg. Co., 60 Chambers, N. Y
Carriage Springs. Dexter Spring Co., Hulton, near Pittsburgh, Pa Rome Trestie Co. (Limited), Rome, N. Y	Hardware Specialties. Shepard Sidney & Co., Buffalo, N. Y
	Covert Mfg. Co., Troy, N. Y
Roberts A. & P. & Co., 205 S. 41h, Philadelphia 5 Chalins, Reiter & Morton, Pittsburgh, Pa 9 Chilled Rolls (Hollow), Totten & Co., Fulton Foundry, Pittsburgh, Pa Chisels, Manufacturers of, Buck Bros., Milbury, Mass	Hay Knives.  Holt Hiram & Co., East Wilton, Me
Dotte Bros., amoury, acas.   II	Hinges. Lewis, Oliver & Phillips, Pittsburgh, Pa. 13 Scovili Mig. Co., 419 and 421 Broome, N. Y. 37 Stanley Works, New Britain, Conn. 12 Hog Kingers.
Cary & Moen, 234 W. 25th, N. Y. Dunbar Bros. Bristol, Conn. 8 Clothes Pin. (Metallic) Brower J. L. & Son. 286 (Breenwich, N. V.	Hog Ringers.         25           Chambers, Bering & Quinlan, Decatur, Ill.         25           Hoisting Engines, Makers of.         27           Crane Bros., Mfg. Co., Chleago, Ill.         9           Mundy J. S., Newark, N. J.         42
Pardee, A. & Co., III Broadway, N. Y. Tennessee Coal & Rallroad Co., Tracey city, Tenn.	Mundy J. S., Newark, N. J
The Hoboken Coal Co., Jersey City, N. J. 37 Coal Vases. Sidney Shepard & Co., Buffalo, N. Y. 35 Coffee and Spice Mills. Lane Brothers, Millbrook, N. Y. 8 Enterprise Mg. Co., Philadelphia, Pa. 6 Compasses and Dividers, Manufacturers of. 38 Compasses and Dividers, Manufacturers of. 6 Bemins & Call Hardw. & Tool Co., Springfield, Mass. 36 Coopers' Tools. & C., Dealers in. D. R. Barton Tool Co., Rochester, N. Y. 12 Little Chas. E., 39 Fulton, N. Y. 25 Copper, & Co., Baltimore, Md.	New York Handle & Mallet Works, 456 E. Houston 38
Lane Brothers, Milibrook, N. Y. 8 Enterprise Mfg. Co., Philadelphia, Pa. 38 Compasses and Dividers, Manufacturers of.	Horse Nails, Makers of.  Ausable Horse Nail Co., 4 Warren, N. Y
Coopers' Tools, &c., Poolers in.  D. R. Barton Tool Co., Rochester, N. Y. 12  Little Chas. E., 55 Fulton, N. Y. 26	Horse Nails. Makers of.  Ausable Horse Nail Co., 4 Warren, N. Y. 8 Champion Steel Horse Nail Co., Appleton, Wis. Globe Nail Co., Boston, Mass. 41 FP Horse Nail Co., Cleveland, O., National Horse Nail Co., Vergennes, Vt. 25 National Horse Nail Co., Vergennes, Vt. 45 Flatt & Co., Boston, Mass. 35 Flatt & Co., Boston, Mass. 35 Stetson N. Jr., 27 Pearl, N. 45 Horse Nail Co., Wopnset, Mass. 35 Stetson N. Jr., 27 Pearl, N. 45 Horse Nail Co., Wopnset, Mass. 35
	Platt & Co., Buffalo, N. Y
Corn Huskers. Chambers, Bering & Quinlan, Decatur, Ill	Horse Shoes, Makers of Boston Rolling Mills, 17 Batterymarch, Boston 5 Burden Iron Works, Troy, N. Y Rhode Island Horse Shoe Co., Providence, R. I. 4 Schoenberger & Co., Pittsburgh, Pa. 4
Crucibles, Manufacturers of. Wile, Siedel & Co., 709 Market, Phila	Rhode Island Horse Shoë Co., Providence, R. I
Curry Combs, Manufacturers of. Hazelton D. W. & Co., Philadelphia, Pa	Dudgeon Richard, 24 Columbia, N. Y40
Lawrence Curry Comb Co., 382 2d av., N. Y	Insurance, Boiler. Hartford Steam Boiler Inspection & Insurance Co43
The New Haven Copper Co., 255 Pearl, N. Y.  Corn Huskers. Chambers, Bering & Quinlan, Decatur, Ill. 25  Corrugated Iron. Moseley Iron Bridge and Roof Co., 5 Dey, N. Y. 4  Craicbles, Manufacturers of, Wile, Siedel & Co., 70 Market, Phila. 39  Cupolas & Howers. 20 Cortlandt st., N. Y. 42  Curry Combs., Manufacturers of, Hazelton D. W. & Co., Philadelphia, Pa. 39  Hotchkiss' Sons, Bridgeport, Conn. 12  Lawrence Curry Comb Co., 382 2d av., N. Y. 32  Cutlery, Importers of, Solder, N. Y. 37  Clautery, Importers of, Solder, N. Y. 37  Clautery, Solder, Combon, Solder, N. Y. 37  Clautery, Combon, Solder, N. Y. 37  Clauworthy F. & W., 82 Chambers, N. Y. 31  Friedmann & Lauteriung, 14 Warren, N. Y. 31  Cutlery, Manufacturers of, Borkinshaw Aaron, Pepperell, Mass. 31  Meriden Cutlery Co., 85 Chambers, N. Y. 31  New York Knife Co., Walden, N. Y. 31  The Lamson & Goodnow Mig. Co., 88 Chambers, N. Y. 31  The Frary Cutlery Co., 85 Chambers, N. Y. 31  The Frary Cutlery Co., 87 Chambers, N. Y. 31  The Frary Cutlery Co., 87 Chambers, N. Y. 31  The Lamson & Goodnow Mig. Co., 88 Chambers, N. Y. 31  Differential, Pulley Blocks.	Boynton Geo. A., 70 Watl, N. Y.  Boynton Geo. A., 70 Watl, N. Y.  Etting Edward J., Philadelphia, Pa.  5 Hatry A. G., Pittsburgh, Pa.  4 Hazard T. D., 204 Pearl, N. Y.  4
Burkinshaw Aaron, Pepperell, Mass	Quincy John W., 68 William, N. V.
Naugatuck Cutlery Co., 89 Chambers, N. Y	Iron Commission Merchants. Adams Hugh W., 56 Pine, N. Y. 26 Lowe S. B., Chattanooga, Tenn. 6 Spooner & Collins, St. Louis, Mo. 5
Differential Pulley Blocks. Yale Lock Mg. Co., 55 Chambers, N. Y	Williamson James & Co., 69 Wall, N. Y
Differential Pulley Blocks. Yale Lock Mg. Co., 3 Chambers, N. Y. 7 Discount Tables. Jennings S. H., Deep River, Conu. 20 Dog Muzzles. 20	Iron Dealers.
Jennings S. H., Deep River, Conn. 20 Dog Muzzles, Mersereau W. T. & J., 321 Broadway, N. Y. 12 Door and Gate Springs, Dunne P. R., 132 Fulton, N. Y. 36 Quackenbush, Townsend & Co., 50 Reade, N. Y. 38 Van Wagouer & Williams, 82 Beekman, N. Y. 44 Door Stops and Holders, Spangler & Co., Pittsburgh, Pa. Drill Chucks, Manyfacturers of, Cushman A. F., Hartford, Conn. Lambertville Iron Works, Lambertville, N. J. 26 Drilling Machines, Makers of, Bickford H., Clincinnati, O. 44 Thorne, De Haven & Co., Philadelphia. 42 Drop Forgings.	Iron Dealers. Abeel Brothers, 190 South, N. Y. Bonnell, Botsford & Co., Youngstown, O. Borden & Lovell, 70 and 71 West, N. Y. Carmichael W. J., 190 and 132 Cedar, N. Y. Cooney Daniel F., 88 Washington, N. Y. Huerstel G., 99 Market Slip, N. Y. Fuller, Lord & Co., 139 Greenwich, N. Y. Harrison & Gilloon, 558 to 562 Water, N. Y. Jackson & Chase, 20 and 268 Franklin, N. Y. Judson B. F., 457 and 450 Water, N. Y. Kane C., Pittsburgh, Pa.
Van Wagoner & Williams, 82 Beekman, N. Y	Fuller, Lord & Co., 130 Greenwich, N. Y. Harrison & Gilloon, 558 to 552 Water, N. Y. Jackson & Chase, 200 and 208 Franklin, N. Y. 4
Drill Chucks, Manufacturers of. Cushman A. F., Hartford, Conn. Lambertville Iron Works, Lambertville, N. J. 26	Judson B. F., 457 and 459 Water, N. Y. 4 Kane C., Pittsburgh, Pa. 4 Ozden & Wallace, 85, 87, 89 and 91 Elm, N. Y. 4 Lerson & Co., Procedure N. V. 4
Bickford H., Cincinnati, O	Puilmann J. Wesley, Philadelphia, Pa. 5 Quincy John W., 38 William, N. Y. 4 Richards D. W. & Co., 22 Mangin, N. Y.
	Jackson & Chase, 2c6 and 2c6 Franklin, N. Y. Judson B. F., 457 and 450 Water, N. Y. Kane C., Pittaburgh, Fa. Ozden & Wallace, 8, 87, 89 and or Elm, N. Y. Pierson & Co., 2z Broadway, N. Y. Pullmann J. Wesley, Philadelphia, Pa. Quincy John W., 98 William, N. Y. Richards D. W. & Co., 92 Mangin, N. Y. Wallace Wm. H. & Co., 41 Many and Washington streets, N. Y. Warner A. B. & Sons, 28 and 20 West, N. Y. Williamson James & Co., 69 Wall, N. Y. Williamson James & Co., 69 Wall, N. Y. Whitney A. R. & Bro., 38 Iludson, N. Y.  Iron. (Manufacturers' Agents.)
Rose Wm. & Bros., West Philadelphia, Fa. 32 Drop Presses. Beecher & Pock, New Haven, Conn. 43 Edge Tools, Makers of. The D. R. Barton Tool Co., Rochester, N. Y. 12 Doscher M., 4 and 6 Gold, N. Y. 25 Elevators, Makers of. Crane Bros. Mig. Co., Chicago, III. 9 Lane & Bodley Co., Cincinnati, O. 43 Mason Voiney W. & Co., Providence, R. I. 44 Stokes & Parrish, Philadelphia, Pa. 42 Elevator Buckets.	Whitney A. R. & Bro., 58 Hudson, N. Y
Crane Bros. Mfg. Co., Chicago. III. 9 Lane & Bodley Co., Cincinnati, O. 43	Fron, Manufacturers of. Boston Rolling Mills, 17 Batterymarch, Boston 5 Bradley, Reis & Co. as Cliff, N.
Stokes & Parrish, Philadelphia, Pa	Burden Iron Works, Troy, N. Y. Collins H. E. & Co., Pittsburgh, Pa. Houdlette & Ellis, Boston, Mass.
Stokes & Parrish, Philadelphia, Pa	Leonard John, 450 and 451 West, N. Y.  Oxford Iron Co., 81 Washington, N. Y.  Phoenix Iron Co., 410 Washington, N. Y.
	Rowland James & Co., 920 N. Delaware, Phia
Brown Caloric Engine Co., 57 Lewis, N. Y Engines (Locomotive).	Snoenberger & Co., Pittsburgh, Pa
Baldwin Locomotive Works, Philadelphia, Pa. 4 Engines, Stenin, Makers of, Ervien Chas. W. & Co., Kensington, Phila. Farquhar A. B., York, Pa. Fitchburg Steam Engine Co., Fitchburg, Mass. 40 Landis F. F. & A. B., Lancaster, Pa. 43 Lovegrove & Co., Philadelphia, Pa. 40 Payne B. W. & Sons, Corning, N. X.	Levis & Kimbail, Philadelphia, Pa.  1ron. Manufacturers of. Boston Rolling Mills, 17 Batterymarch, Boston Bradley, Relis & Co., 22 Cliff, N. Y  Bradley, Relis & Co., 22 Cliff, N. Y  Collins H. E. & Co. Pittsburgh, Pa. Houdlette & Ellis, Boston, Mass. Kirkpatrick, Beale & Co., Pittsburgh, Pa. Leonard John, 450 and 451 West, N. Y  A Leonard John, 450 and 451 West, N. Y  Oxford fron Co., 58 Washington, N. Y  Phoenix Iron Co., 410 Wahnut, Philadelphia.  Rowane Iron Co., Chattanooga, Tenn.  6 Rowland James & Co., 250 N. Delaware, Phia.  5 Rowland Wm. & Harvey, Philadelphia.  4 Shoenberger & Co., Pittsburgh, Pa.  4 Taylor & Boggis, Cleveland, O.  The Passaic Rolling Mill Co., Paterson, N. J.  4 Vulcan Iron and Nail Works, Chattanooga, Tenn.  6 U. S. Iron and Tin Plate Co., Pittsburgh, Pa.  Zug & Co., Pittsburgh, Pa.  1 Jron, Planished Sheet, Manufacturers of,
Fitchburg Steam Engine Co., Fitchburg, Mass. 40 Landis F. F. & A. B., Lancaster, Pa. 43 Lovegrove & Co., Philadelphia, Pa. 40 Payne B. W. & Sang Courter, Pa. 40	Iron, Planished Sheet, Manufacturers of. Wood W. D. Co., Pittsburgh, Pa
	Lalance & Grosjean Mfg. Co., 89 Beekman, N. Y 7

7	
Pynant Pastara	Ī,
Export Factors, Jennings S. H., Deep River, Conn	1
McNab & Harlin Mfg. Co., s6 John, N. V	1.
Faucets, Wood Penfield Block Works, Lockport, N. Y	1
Faucets, Self-Measuring, Makers of. Enterprise Mfg. Co., of Pa., Phila. and N. Y38 Felting and Wadding.	1
Felting and Wadding. Bacon Chas. N., Winchester, Mass	1
Files, Importers of. Carr J. & Riley, 82 John, N. Y. Fisher Joseph S., 411 Commerce, Phila. 111 Frasse Peter A. & Co., 95 Fulkon, N. Y. 8 Moss F. W., 80 John, N. Y. Sanderson Bros. & Co., 16 Cliff, N. Y. 36	1
Moss F. W., 80 John, N. Y	1
Sanderson Bros. & Co., 10 CHR, N. Y. 55 Files, Manufacturers of. American File Co., Pawtucket, R. I. Auburn File Works, 80 Chambers, N. Y. 88 Barnett G. & H., 41 and 43 Richmond, Phila. 8 Chalmers & Murray, 76 Reade, N. Y. 88 Disston Henry & Sons, Phila. 33 Draper C. T. & Co., Sing Sing, N. Y. Everhart James M., Scranton, Pa. 44 Heller & Bros., Newark, N. J. Johnson & Bro., 1 Commercial, Newark, N. J. 8 Paul Chas. B., Williamsburgh, N. Y. 8 Pire Brick, Makers of.	1
Auburn File Works, 80 Chambers, N. Y	1
Disston Henry & Sons, Phila	
Heller & Bros. Newark, N. J.	
McCaffrey & Bro., 1732 and 1734 N. 4th, Phila	
Paul Chas. B., Williamsburgh, N. Y. 8 Fire Brick, Makers of. Borgner & O'Brien, Philadelphia, Pa. 19 Brooklyn Clay Retort and Fire Brick Worke, Van Dyke St., Brooklyn, N. Y. 10 Gardner, Stuart & Co., Pittsburgh 10 Hall & & Sons, Perth Amboy, N. J. 10 Hall & & Sons, Perth Amboy, N. J. 10 Hall & & Sons, Buffalo, N. Y. 10 Kreischer B. & Son, 65 Goerck, N. Y. 10 Newton & Co., Albany, N. Y. 10 Ostrander James & Son, Troy, N. Y. 10 Valentine M. D. & Bro., Woodbridge, N. J. 10 Watson John R., Perth Amboy, N. J. 10 Weber Adam, 633 E. 15th, N. Y. 10 Flint and Emery Paper and Cloth.	1
Dyke St., Brooklyn, N. Y	
Hall A. & Sons, Perth Amboy, N. J. 19 Hall & Sons, Buffalo, N. Y. 19	
Kreischer B. & Son, 58 Goerek, N. Y	1
Ostrander James & Son, Troy, N. Y	1
Weber Adam, 633 E. 15th, N. Y	
Baeder, Adamson & Co., 730 Market, Phila	
Flower Pot Stands. Barnum E. T., Detroit, Mich	1
Fluting Machines. The American Machine Co., Philadelphia	1
Keystone Portable Forge Co., Philadelphia40	1
Brown T. J., Rockwood, Tenn	1
Paxson J. W. & Co., 514 Beach, Phila	1
Disherend & Date C. W	1
Richmond & Potts, 119 S. Fourth, Phila., Pa. 5	1
Carey & Moen, 234 W. 29th, N. Y. 3 Halgh Loyd J., 81 John, N. Y. 2 Galyanized Iron. 2	1
Lefferts Marshall Jr. oo Reekman N V	1
Grain Cradles. Grant Fan Mill and Cradle Co., Melrose, Rensselaer Co., N. Y	7
Grindstones. Cooper & Hoile, Brooklyn, N. Y. Cooper & Hoile, Brooklyn, N. Y. Wilson & Hughes Stone Co., Cleveland, O. 37 Wood H. S. & Co., 38 West, N. Y. Wood Waiter R., 283 and 385 Front, N. Y. Word Waiter R., 283 and 385 Front, N. Y. Guns. & C. Suns. & C.	
Wilson & Hughes Stone Co., Cleveland, O37 Wood H. S. & Co., 28 West, N. Y37 Wood Walter R., 28 and 28 Front N. V37	7
Worthington & Sons, North Amherst, O37	1
Guns, &c., Windmulier Louis & Roelker, 20 Reade, N. Y20 Gunpowder, Makers of.	1
Gunpowder, Makers of. Kneeland F. L. (Dupont) 70 Wall, N. Y	1
	I
Biglin Philip S., too Chambers, N. Y. 0 Graham & Haines, 113 Chambers, N. Y. 38 Salomon L., too Chambers, N. Y. 111 Samuel S. L. 57 Cedar, N. Y. 3	
Trailing & Wilson, of Deckinan, N. I.	l I
Waterings G. B. & Co., 23 Reade, N. Y	
Shepard Sidney & Co., Buffalo, N. Y	8
Hardware Importers, Boker Hermann & Co. 101 Duane, N. Y	-
Van Wart, Son & Co., 134 and 136 Duane, N. Y11 Windmuller Louis & Roelker, 20 Reade, N. Y20	1
Hardware Manufacturers, American Spiral Spring Butt Co., 82 Beekman, N.Y.44 Clark & Co. Buffalo N. V.	1
Coulter, Flagler & Co., 87 Chambers, N. Y. 32 Cowles Hardware Co., Unionville, Conn 13	1
Windmuller Louis & Roelker, 20 Reade, N. Y. 20 Hardware Mannfacturers, American Spiral Spring Butt Co., 82 Beekman, N. Y. 42 Clark & Co., Buffalo, N. Y. 53 Coulter, Flazler & Co., 27 Chambers, N. Y. 52 Coulter, Flazler & Co., 27 Chambers, N. Y. 52 Covles Hardware Co., Thionville, Conn. 13 Enterprise Mfg. Co., Phila. 13 Enterprise Mfg. Co., Phila. 14 Enterprise Mfg. Co., Phila. 15 Enterprise Mfg. Co., 127 Chambers, N. Y. Llovd, Supplee & Walton, 625 Market St., Phila., Pa. 37 Miller's Falls Mfg. Co., 24 Chambers, N. Y. 15 Fratt & Co., Buffalo, N. Y. 35 R. Bliss Mfg. Co., Pawtucket, R. 1. 36 Russell & Erwin Mfg. Co., New York 10 Shepard Hardware Co., Buffalo, N. Y. 3 Stanley Works, New Britain, Conn. 16 Union Mfg. Co., 20 Chambers, N. Y. 7 Yun Wagoner & Williams, 82 Beekman, N. Y. 44 Hardware Specialties.	
Miller's Falls Mfg. Co., 74 Chambers, N. Y	1
R. Bliss Mrg. Co., Pawtucket, R. 1	1
Stanley Works, New Britain, Conn. 12 Union Mfg. Co., 99 Chambers, N. Y	1
Hardware Specialties.	1
Hardware Specialties. Shepard Sidney & Co., Buffaio, N. Y	
Hardware (Wagon.) Covert E. & J. C., Farmer Village, N. Y	
Harness Snaps. Covert Mfg. Co., Troy, N. Y	
Hay Knives. Holt Hiram & Co., East Wilton, Me	
Hinges. Lewis, Oliver & Phillips, Pittsburgh, Pa. 13 Scovill Mfg. Co., 419 and 421 Broome, N. Y 37 Stanley Works, New Britain, Conn 12 Hog Ringers.	0
Hog Ringers. Chambers, Bering & Quinlan, Decatur, Ill	0
Hoisting Engines, Makers of. Crane Bros., Mfg. Co., Chicago, III. 9 Mundy J. S., Newark, N. J. 42	0
Mundy J. S., Newark, N. J	0
Hoisting Machines.  Harrington Edwin & Son, Philadelphia, Pa	P
Now York Handle & Mallet Works at F Tourses	F
Horse Nails, Makers of. Ausable Horse Nail Co., 4 Warren, N. Y	P
Globe Nail Co., Boston, Mass	P
Horse Nails, Makers of.  Ausable Horse Nail Co., 4 Warren, N. Y.  Champion Steel Horse Nail Co., Appleton, Wis.  Globe Nail Co., Boston, Mass.  15 Horse Nail Co., Cleveland, O. 41  National Horse Nail Co., Vergennes, Vt. 25  Northwestern Horse Nail Co., Chicago, III. 41  Platt & Co., Buffalo, N. Y.  25 Stetson N. Jr., 73 Pearl, N. Y.  41  Horse Shores, Makers of.	
Putnam Nail Co., Neponset, Mass. 35 Stetson N. Jr., 73 Pearl, N. Y 26	P
Horse Shoes, Makers of. Boston Rolling Mills, 17 Batterymarch, Boston.	P
Horse Shoes, Makers of. Boston Rolling Mills, 17 Batterymarch, Boston. 5 Burden Iron Works, Troy, N. Y. Rhode Island Horse Shoe Co., Providence, R. I. 41 Schoenberger & Co., Pittsburgh, Pa. 4 Hydrants, &c.	-
Hydrants, &c. McLean John, 300 Monroe, N. Y	F
Hydraniic Jacks. Dudgeon Richard, 24 Columbia, N. Y40	P
Insurance, Boiler, Hartford Steam Boiler Inspection & Insurance Co43	P
Iron Brokers, Boyston Geo. A so Wall N. V.	-
Iron   Brokers	II)
	P
Quincy John W., 98 William, N. Y	P
Iron Commission Merchants. Adams Hugh W., 56 Pine, N. Y. 26 Lowe S. B., Chattanoga, Tenn 6 Spooner & Collins, St. Louis, Mo. 5	F
Williamson James & Co. 60 Well N. V.	P
Abeel Brothers, 190 South, N. Y	P
Bonnell, Botsford & Co., Youngstown, O	F
Cooney Daniel F., 88 Washington, N. Y. Huerstel G., 99 Market Slip, N. Y. Fuller, Lord &	F
Harrison & Gilloon, 528 to 562 Water, N. Y.  Jackson & Chase, 206 and 208 Franklin, N. Y.  4	F
Judson B. F., 457 and 459 Water, N. Y. Kane C., Pittsburgh, Pa. 4	-
Pierson & Co., 24 Broadway, N. Y	F
Quincy John W., 98 William, N. Y. Richards D. W. & Co., 92 Mangin, N. Y.	1
wallace Wm. H. & Co., Albany and Washington streets, N. Y.	
Williamson James & Co., 69 Wall, N. Y. 4 Whitney A. R. & Bro., 58 Hudson, N. Y. 4	E
Iron Dealers. Abeel Brothers, 100 South, N. Y. Abeel Brothers, 100 South, N. Y. Bornell, Botsford & Co., Youngstown, O. Borden & Lovell, 70 and 71 West, N. Y. Conney Daniel F., 28 Washina Can, N. Y. Huerstel G., 90 Market Slip, N. Y. Fuller, Lord & Co., 130 Greenwich, N. Y. Harrison & Gilloon, 528 to 552 Water, N. Y. Jackson & Chase, 20 and 226 Franklin, N. Y. Jackson & Chase, 20 and 226 Franklin, N. Y. Judson B. F., 457 and 450 Water, N. Y. Agaden & Wallace, 85, 87, 89, and 91 Elm, N. Y. Pullmann J. Wesley, Philadelphia, Pa. Quincy John W., 56 William, N. Y. Wallace Wim, M. & Co., 25 Mangin, N. Y. Wallace Wim, M. & Co., 40 Mangin, N. Y. Warner A. B. & Sons, 26 and 20 West, N. Y. Williamson James & Co., 62 Wall, N. Y. Williamson James & Co., 62 Wall, N. Y. Whitney A. R. & Bro., 58 Hudson, N. Y. Iron. (Manufacturery Aganta), Levis & Kimball, Philadelphia, Pa.	ı
Pron. Manufacturers of. Boston Rolling Mills, 17 Batterymarch, Boston 5	-
Burden Iron Works, Troy, N. Y	1
Houdlette & Ellis, Boston, Mass	1
Oxford Iron Co., 8: Washington, N. Y	
Levis & Kimball, Philadelphia, Pa.  Fron. Manufacturers of. Boston Rolling Mills, 17 Batterymarch, Boston  Bradley, Reis & Co., 22 Cliff, N. V.  Burden Iron Works, Troy, N. Y.  Collins H. E. & Co., Pittsburgh, Pa. 4  Kirkpatrick, Beale & Co., Pittsburgh, Pa. 4  Leonard John, 40 and 451 West, N. Y.  Oxford Iron Co., 52 Washington, N. Y.  Phenix Iron Co., 40 Walnut, Philadelphia 5  Roane Iron Co., 440 Walnut, Philadelphia 5  Roane Iron Co., Chatanooga, Tenn. 6  Rowland James & Co., 20 N. Delaware, Phia. 5  Rowland Wm. & Harvey, Philadelphia. 44  Shoenberger & Co., Pittsburgh, Pa. 4  Taylor & Boggis, Cleveland, O.  The Passaic Rolling Mill Co., Paterson, N. J.  Vulcan Iron and Nail Works, Chattanooga, Tenn. 6  Tren and Nail Works, Chattanooga, Tenn. 4	1
Shoenberger & Co., Pittsburgh, Pa	*
The Passaic Holling Mill Co., Paterson, N. J	1

Ironware (Granite.) St. Louis Stamping Co., St. Louis, Mo	_
Kitchen Sinks.	1
Lanterna, Manufacturers of	1
Lanterns, Manufacturers of. Dietz R. E. (Tubular) 54 and 56 Fulton, N. Y	
Lathe Dogs. North Selden G., Philadelphia	
Johnson, Jr. Israel H. & Co., Philadelphia. 44 Shepard H. L. & Co., Cincinnati, O. 44 Lawn Mowers. Mast, Foos & Co., Springfield, O. 26	
Mast, Foos & Co., Springfield, O	
Levels. Disston Henry & Sons, Philadelphia33	
Locks, Manufacturers of.  Bohannan Wilson, Broadway and Kossuth, Brook- lyn, E. D	
D. K. Miller Lock Co., Philadelphia, Pa	
Stewart & Mattson, Philadelphia, Pa	
Machinery, Makers of The Mills and Machinery, Makers of Machinery, Makers of Mills Tool Works, Hamilton, O	-
Pittsburgh Mgc Co., Pittsburgh, Pa. 42 Pratt & Whitney Co., Hartford, Conn. 43	
The Bullard Machine Co., 14 Dey, N. Y	
Lyon & Fellows Mfg. Co., Williamsburg, N. Y	
Frasse & Co., 62 Chatham, N. Y	
Mallets. N. Y. Handle and Mallet Works, 456 E. Houston38	
Manganese. Pyrolusite Manganese Co., 214 Pearl, N. Y	
Mensuring Tapes. Eddy Geo. M.& Co., 353 Classon Ave., Brooklyn, N.Y. 9 Ment Chopping Machinery. Murray Iron Works, Burlington, Iowa	
Metal Dealers and Brokers. Crane U. O., 104 John, N. Y.	
Dickerson, Van Dusen & Co., 29 and 31 Cliff, N. Y 2 Gregg H. L. & Co., 108 Walnut, Philadelphia 5 Phelps, Dodge & Co., Cliff, bet. John & Fulton, N. Y. 2	1
Purves A. & Son, cor. South and Penn, Palla	1
Hogen Elbow Co., Cleveland, O42	1
Metallurgists. Britton J. Blodgett, 339 Walnut, Philadelphia 5 Metals Perforated.	1
Hayes G., 71 8th ave	
Mica. Chester Mica & Porcelain Co., 87 Liberty, N. Y38	-
James Boyd's Sons, 10 and 12 Franklin, N. Y42 Hineral Lands, Dealer in.	١
Hoskins W. A., Chattanooga, Tenn	
Models. Burrows Wm., 99 Fulton, N. Y	
House Traps.   Dietz R. E., 54 and 56 Fulton, N. Y	1
Oliver E., 100 and 100 beekman N. 1	
Inila	
Schoenberger & Co., Pittsburgh, Pa	
Hartman John, 37½ N. Seventh, Philadelphia41 Jackson Geo. W., 21 E. 13th, N. Y	1
Jackson Geo. W., 21 E. 13th, N. Y. 41  (ickel Platers' Supplies.  Colt A. T., 47 Beekman, N. Y. 41	1
ickel Platers' Supplies. Colt A. T., 47 Beekman, N. Y. Condit, Hanson & Van Winkle, Newark, N. J. 41 Zucker & Levett, 639 and 641 W. 518t, N. Y. 31	١
ight Latches. Many Francis, 143 Chambers, N. Y	I
Gallaudet P. W., 3 and 5 Wall, N. Y 4	
Int Tapping Machines.	
Howard Iron Works, Buffalo, N. Y.  11ts, Holits, etc., Makers of, Fuller Bros. & Co., 130 Greenwich, N. Y. Haskell W. H. & Co., Fawtucket, R. I. Boseberry, Geo. D., Pottsville, Pa. 13 Roseberry, Geo. D., Pottsville, Pa. 14 Russell, Birdsall & Ward, Port Chester, N. Y. 44	١
Lewis, Oliver & Phillips, Pittsburgh, Fa. 33 Roseberry, Geo. D., Pottsville, Fa. 4 Russell, Birdaall & Ward, Port Chester, N. Y. 44 Standard Nut Co., Pittsburgh, Fa. 5 Sternburgh J. H., Chambers, W. Y. 4 Sternburgh J. H., Chambers, W. Y. 4	ı
Standard Nut Co., Pittsburgh, Pa.         6           Sternbergh J. H., Reading, Pa.         44           Union Nut Co., 99 Chambers, N. Y.         38	١
Oil, Lubricating, Makers of. Lester Oil Co., 81 Maiden Lane, N. Y42	l
Dil Stones. Boyd & Chase, 107th and Harlem River, N. Y37 Dil Stoves.	ı
Florence Machine Co., Florence, Mass	l
lld Iron, etc. Gregg H. L. & Co., 108 Walnut, Philadelphia 5 acking (Steum.)	l
Gregg H. L. & Co., 108 Walnut, Philadelphia	
Devoe F. W. & Co., 117 Fulton, N. 1 ans (Pripping and Bread.) Lewis, Dalzell & Co., Pittsburgh, Pa	١
Patent Solleitors. Howson & Son, Phila and Washington, D. C. 7 Lenz & Schmidt, Berlin, N. W. 7 Spencer A. H., 28 State, Boston, Mass 7 Stetson Thomas D., 23 Murray, N. Y. 7	l
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Stetson Thomas D., 23 Murray, N. Y	
Perry & Co., Limited, 113 and 114 William, N. Y26 licks, Makers of.	l
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Sausage Stuffers. Silver & Deming Mfg. Co., Salem, O	Stocks and Dies. Holroyd & Co., Waterford, N. Y
Sawa, Makers of.  American Saw Co., Trenton, N. J.  Boynton, E. M., So Beekman, N. Y.  Disston Henry & Sons, Phila.  Peace & Hogan, Williamsburg, N. Y.  Wheeler, Madden & Clemsen Mig. Co., Middletown, N. Y.  Saw France, Wood, Makers of	Stone Ironware. Metal Stamping & Enameling Co., St. Louis, Mo 3 Stove Boards, Manufacturers of.
Boynton, E. M., 80 Beekman, N. Y	Stove Boards, Manufacturers of.
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town, N. Y	Stove Pipe. Shepard Sidney & Co., Buffalo, N. Y
Peace Harvey W., Williamshurg, N. V.	Stove Repairs. Metzner W. C., Chicago, Ill
Scales, Manufacturers of.  Brandon Mfg. Co., Brandon, Vt	Stoves. Michigan Stove Co., Detroit, Mich Tacks.
Riehle Bros., 9th above Master, Phila	American Tack Co., Fairhaven, Mass
Semple & Riggs Wes Co. St. Louis Wo.	Field A. & Sons, Taunton, Mass
American Screw Co. Providence P. I.	Shelton Co., Birmingham, Ct
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Serewa, Makers of.  Serewa, Makers of.  Serewa, Makers of.  Wiles F. S. Serewa, Providence, R. I	Tin Plate, Manufacturers of. U. S. Iron and Tin Plate Co., Pittaburgh, Pa.
Bruce Geo. W., r Platt, N. Y 6	Tacks, American Tack Co., Fairhaven, Mass.  American Tack Co., Fairhaven, Mass.  Dunbar, Hobart & Whidden, 116 Chambers, N. Y. 22. Field A. & Sons, Taunton, Mass.  Grundy Geo. C., 155 Greenwich, N. Y. 26 Shelton Co., Birmingham, Ct.  Taps and Dies. Carpenter J. M., Pawtucket, R. I
Crew Cutting Machinery. Howard Iron Works, Buffalo, N. Y	Disston Henry & Sons, Phila
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Diston Henry & Sons, Phila	Topliff & Ely, Elyria, O
cythe Stones. Dishman F. E., New Albany, Ind	Morse Twist Drill & Mach. Co., N. Bedford, Mass39 Upholsterers' Goods.
hafting.	Lipholsterers' Goods.  Co., S. Bedford, Mass39  Lipholsterers' Goods.  Values, Gas. Water and Steam.  Lives, Gas. Water and Steam.  Mohawk & Ludon Mg. Co., Troy N. Y
Wood Thomas, Philadelphia	Ludlow Valve Mfg. Co., Troy, N. Y
Shovels, &c. Hubbard, Bakewell & Co., Pittsburgh Pa. 6 Kimbali Shovel Co., Baltimore, Md. 38 Rowland B. & Co., Philadelphia. 19	Bracher Ventilator Co., a Park Row, N. V
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shears (Sheep). Hildick A. H. & Co., 13 Warren, N. Y	Trenton Vise & Tool Works, 101 & 103 Duane, N. Y. 25
ide Spring Connecting Rods. Topliff & Ely, Elyria, O	Lafayette Wagon Spring Co., Lafayette, Ind26 Watchman's Time Detectors.
Reeves Paul S., 760 South Broad, Phila44	Buerk J. E., Boston, Mass
	Shoots, Vinton & Co., Horseheads, N. Y
Manning & Squier, 113 Liberty, N. Y	Vises.  Bailey Wringing Machine Co., 90 Chambers, N. Y., 25 Millers Falls Co., 74 Chambers, N. Y., 25 Millers Falls Co., 74 Chambers, N. Y., 25 Fisher & Norris, Trenton, N. J., 30 Trenton Vise & Tool Works, 101 & 103 Duane, N. Y., 25 Wagon Springs.  Lafayette Wagon Spring Co., Lafayette, Ind., 26 Watchman's Time Detectors.  Buerk J. E., Boston, Mass.  Water Pipes (Woodep). Shoots, Vinton & Co., Horseheads, N. Y., 6 Water Wheels (Turbine). Alcott F. C. & Son, Mount Holly, N. Y., 43 Weather Strips.  Bracher Ventilator Co., 3 Park Row, N. Y., 8 Wheelbarrows.
Carey & Moen, 234 W. 20th, N. Y	Bracher Ventilator Co., 3 Park Row, N. Y 8 Wheelbarrows.
Carey & Moen, 234 W. 29th, N. V. Carey & Moen, 234 W. 29th, N. V. Carey & Moen, 244 W. Moen, 245 W. Carey & Moen, 245 W. Carey & Co., Buffalo, N. V	Wheelbarrows. Rodgers H. A., 19 John, N. Y. Semple & Birge Mg. Co., St. Louis, Mo. 6 White Lend, Manufacturers of. Brooklyn White Lead Co., 85 Maiden Laue, N. Y. 32 Colgate Robert & Co., 287 Pearl, N. Y. 32 Jewett John & Sons, 182 Front, N. Y. 32 Jewett John T. & Bros., 218 Front, Phila., Pa. 32 Window Springs. Makers of. Tammoon W. S., Lewisberry, Pa.
The Chicago Stamping Co., Chicago, Ill	Brooklyn White Lead Co., 89 Maiden Lane, N. Y32
The Chicago Stamping Co., Chicago, III. 3 steam Bellers. Firmenich J. G. & F., Buffalo, N. Y. Steam Hammers, & C., Makers of. Dudgeon Richard, 24 Columbia, N. Y. Steam Hammers, & Manufacturers of. Cameron A. S., East 23d, N. Y. Canylor John C. S., Chicago, N. Y. S. Canylor S. C. Chechand, N. Y. Shultz M., Cincinnati, O. Shultz M., Cincinnati, O. Shultz M., Cincinnati, O. Steam Traps. Albany Steam Trap Co., Albany, N. Y. Albany Steam Trap Co., Albany, N. Y. Street Castings, Manufacturers of. Chester Castings Co., Evelina, Phila, Pa. 44	Jewett John & Sons, 182 Front, N. Y
Dudgeon Richard, 24 Columbia, N. Y	Window Springs, Makers of.
Cameron A. S., East 23d, N. Y.	Come & Moon as 117 - Ab N 17
Crane Bros. Mfg. Co., Chicago, Ill. 40	Gilbert & Bennett Mfg. Co., 273 Pearl, N. Y 2
McGowan John H. & Co., Cincinnati, O	Gilbert & Bennett Mfg. Co., 273 Pearl, N. Y. Haigh J. Lloyd, 81 John, N. Y. Harrison Wire Co., 81, Louis, Mo.
Valley Machine Co., Easthampton, Mass	New Haven Wire Works, 58 Cliff, N. Y.
Albany Steam Trap Co., Albany, N. Y	Roberts Henry, Newark, N. J.
Chester Castings, manufacturers of. Chester Castings Co., Evelina, Phila., Pa44	Trenton Iron Co., Trenton, N. J.
Eureka Cast Steel Co., Chester, Pa	Wire Drawing Machinery.
Chester Castings Co., Evelina, Phila., Pa	Wire Gauges.
Steel Importers. Carr J. & Riley, 82 John, N. Y	Wire Goods, Manufacturers of.
Gerl   Importers   30	Haigh J. Lloyd, & John, N. Y.  Harrison Wire Co., St. Louis, Mo.  2 Howard & Morse, 45 Fulton, N. Y.  New Haven Wire Works, & Cliff, N. Y.  2 Prentiss Geo. W. & Co., Holyoke, Mass.  2 Roberts Henry, Newark, N. J.  Washburn & Moen Mfg. Co., Worcester, Mass.  3 Trenton Iron Co., Trenton, N. J.  Worcester Wire Co., Worcester, Mass.  2 Wire Gaugers.  Brown & Sharpe Mfg. Co., Providence, R. I.  Wire Gaugers.  Brown & Sharpe Mfg. Co., Providence, R. I.  Gilbert & Bennett Mfg. Co., 273 Pearl, N. Y.  2 Haddleton Joseph, Rochester, N. Y.  3 Oliver E., 106 and 108 Beekman St., N. Y.  Wire Nails,  Dunbar, Hobart & Whidden, 116 Chambers, N. Y.  4 Haspall William, 65 and 65 Elizabeth, N. Y.  5 Wire Rope. Fron and Steel, Makers of.  Haigh J. Loyd, St. John, N. Y.  2 Adams F. F. & Co., Erie, Pa.  Wooden, Wann Educators of.
Piersons & Co., 24 Broadway, N. Y	Oliver E., 106 and 108 Beekman st., N. Y.
Wolff R. H. & Co., 16 Cliff, N. Y	Dunbar, Hobart & Whidden, 116 Chambers, N. Y25
Randall & Jones, 10 Oliver, Boston, Mass36	Wire Rope, Iron and Steel, Makers of.
Cleveland Rolling Mill Co., Cleveland, O	Hazard Mfg. Co., Wilkesbarre, Pa
Midvale Steel Works, Nicetown, Phila., Pa	Wooden Ware.
Rowland Wm. & Harvey, Frankford, Phila	Adams F. F. & Co., Erie, Pa
Smith, Sutton & Co., Pittsburgh, Pa36	Coes A. G. & Co., Worcester, Mass
Midvale Steel Works, Nicetown, Phila., Pa. 55 Miller, Metcalf & Parkin, Pittsburgh, 155 Rowland Wm. & Harvey, Frankford, Phila. 44 Sanderson Bros., Steel Co., Syracuse, N. Y. 56 Smith, Sutton & Co., Pittsburgh, Pa. 55 Singer, Nimick & Co., Pittsburgh, Pa. 3 Standard Steel Works, Philadelphia, Pa. 3 Standard Steel Works, Philadelphia, Pa. 47 The Edgar Thomson Steel Co. 7 Broadway, N. Y. 57 Wardlow S. & C., Sheffield, England. 5 Siecel Shutters. 5	Wrenches, Manufacturer of Benils & Call Hdw. & Tool Co., Springfield, Mass
The Edgar Thomson Steel Co., 57 Broadway, N. Y. 37	Adams F. F. & Co., Erie, Pa
Clark & Co.'s 162 and 164 W 22th N V	Wringers, Adams F. F. & Co., Erie, Pa., 37 Alexander T. J., Boston, Mass, 11 Bailey Wringing Machine Co., 99 Chambers, N. Y., 25 Matropolitan Washing, Machine Co., 22 Cortland
wardows & c., Saelited, England	
Cary & Moen, 234 W. 29th, N. Y	N. Y Peerless Wringer Co., Cincinnati, O The American Machine Co., Philadelphia37
JUNIER (	ITVETT
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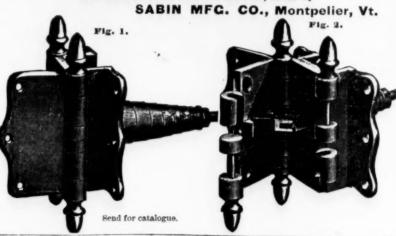
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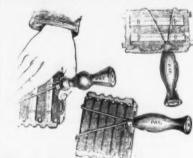
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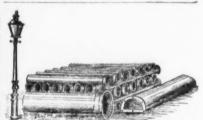
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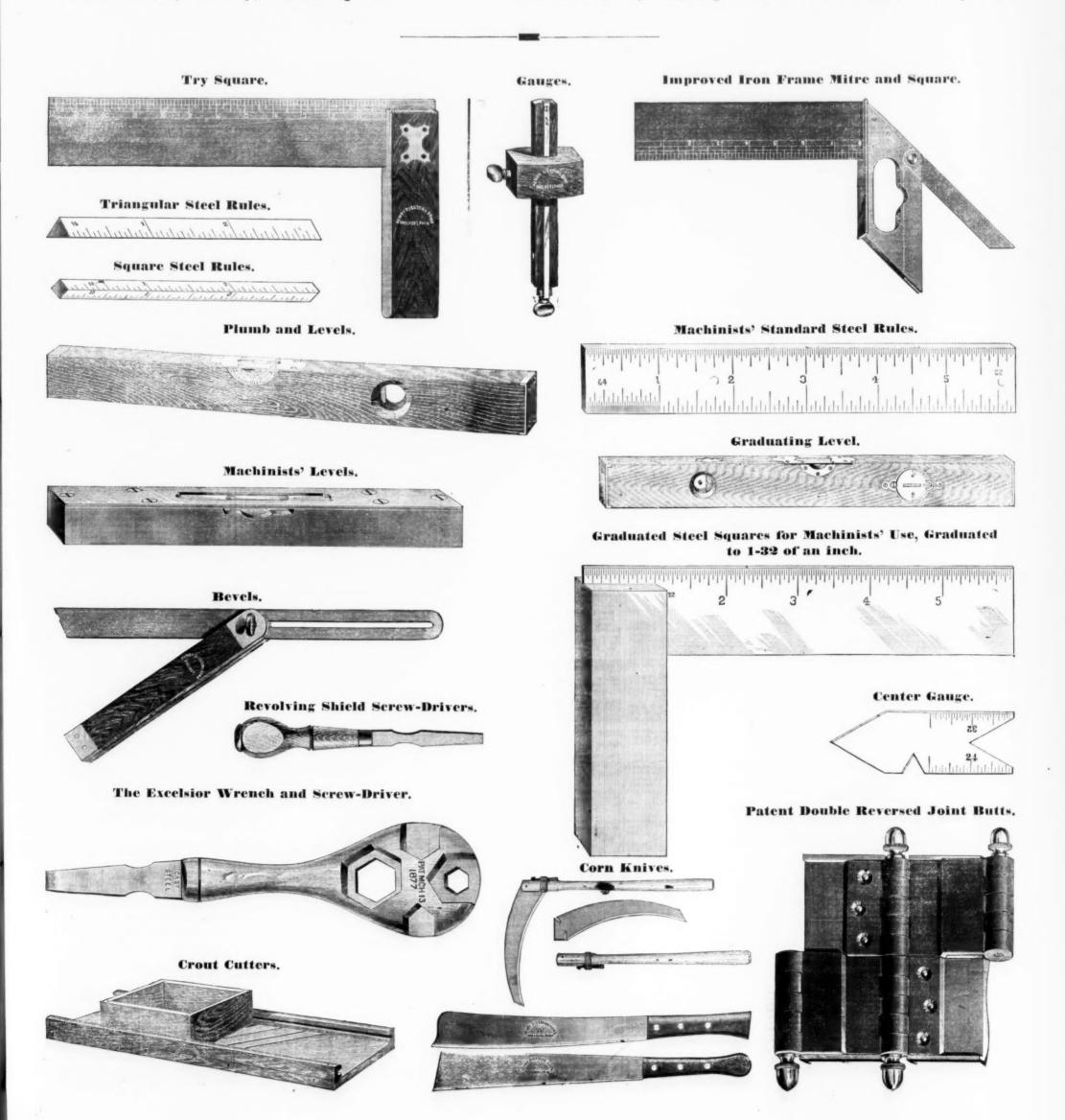
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# New York Wholesale Prices, June 26, 1878.

HARDWARE.	1
Anvils. P b rec-dis 20;	
A nvils.  A nurrican  A nurrican  Wright's W mold told over 250 ms told, gold  Armitage's Mouse Hole  Wilkinson's W mold told over 250 ms told, gold  Armitage's Mouse Hole  Wilkinson's W mold told  Sadic Avvils (American)  Apple Parers &c  Turn Table  Lightning W doz 6,75, dis 10, 20  Reading, '72 W doz 8,00, dis 10, 20  Reading, '72 W doz 8,00, dis 10, 20  Reading, '74 W doz 8,00, dis 10, 20  """  """  """  """  """  """  """	
Apple Parers, &c.	
Bay State.	
75. • doz 8.0, dis 1062 9 78 • doz 8.75, dis 1062 9 Climax Corer and Slicer. • doz 6.75, dis 10	
Conn. Valley Mrg. Co	ı
Notice Mg, Co.	
Kasson's Patent	
Jennings' Bits dis 108 103  Imitation Jenning's Bits dis 208 103  Imitation Jenning's Bits dis 208 103  Ives' 'Jennings' Bits	
Lewis' Single Twist Bits. dis 40 9 Andrews Bits. dis 50 9 Griswold's Patent Bits dis 30 9	
Expansive Bits, Clark's, small, \$18; large, \$26. dis 20 9 " Ives	
Farmelee's small, \$20; large, dis 25; Hollow Augers Ives dis 40 %	
"Bonney's Adjust., \$\Pi\$ doz \$48-dis 25\Pi 10\Pi\$ "Stearns' Adjust., \$\Pi\$ doz \$48-dis 25\Pi 10\Pi\$ "Expansive., \$\Pi\$ doz \$48-dis 25\Pi 10\Pi\$	
Gimlet Bits. \$7.50 \times gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed dis 20 \\ \text{Gimlet Bits.}  \$87.50 \times gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 40 \\ \text{Univ'sai Expansive, each \$4.50 \timed gross, dis 4	
Double Cut Gimlet Pits Shepardson's	
Hartwell's dis 50&10 5 Douglass' dis 40 8 Ives dis 40 & 10 8	1
CHommedieu's Ship Augers dis 15 Watrous Ship Augers dis 15 X	
Sewing, Brass Ferrule\$3.50 \( \) gross—dis 35&10 \( \) Peg, dis 35&10 \( \) As a second of the	1
L'Hommedieu's Ship Augers dis 1 c   Watrous Ship Augers dis 1 c   Marques Ship Augers dis 1 c   Awl Hafts	1
Awis, Brad Sets, &c. Awis Sewing, Common	1
Shouldered Feg.   # gross 2.5—dis 15 8	1
" Handled Scratch\$7.50 \$ gross—dis 24&to \$ (40 cm	i
No. 42, \$10.50; No. 43, \$12.50dis to 5 Stanley's Excelsior.No. 1, \$11.00—dis 25&10 5 Axless	1 27
Bolld Coller, Case Hardened, Chilled How F m oc	12
Axle Grease.—Frazer's.	0
Hand, Light Brass. dis. 75 %	1
" White Metal. dis 508 c&ro 5	H
Crank, Taylor's	I
Connel's dis 50&10 %  Lever, Sargent's dis 66&10 %  "Taylor's Bronze or Plated Lever net	
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Brook 8	
Cow, Common wrought dis 202710 \$  " Western dis 202710 \$  " Sargent's dis 60270 \$  " Fargent's dis 60270 \$	1
Call	
" Yaw's Genuine	١.
	1
Blacksmiths', Common	
Texas. dis 40×10 5  Beliews. Blacksmiths', Common. dis 40 5  Blacksmiths', Extra and Pittsburgh Pattern. dis 20 5  Hand Bellows. Blind Advisers.—Domestic F doz \$3,00, dis 20 5  Blind Advisers.—Domestic F doz \$3,00, dis 20 5  Van Nand's. No. 2000, \$4,00, dis 26 50 5	
Blind A diusters.—Domestic	2.00
Blind A diusters.—Domestic	28
Blind A diusters.—Domestic	200
Blind Adjusters.—Domestic\$\psi\$ dos \$\psi\$0.00 dis 20 \( \) Blind Fasteners.—Mackrell's \$\psi\$1.40 dis 20 \( \) Van Sand's. No. 2000, \$\psi\$1.400, dis 26 \( \) is "old pattern. \$\psi\$ gross, \$\psi\$1.60, dis 26 \( \) Washburn's Patent. \$\psi\$ gross, \$\psi\$1.60, dis 20 \( \) Merriman's.    Brind Staples.   Sin and larger. \$\psi\$ 250     Boardman's Patent. \$\psi\$ in. and larger. \$\psi\$ 250     Barvey's Patent. \$\psi\$ in. \$\psi\$ 300, dis 26 \( \) \$\psi\$ in. \$\psi\$ 300, dis 25 \( \) Differential Pulley Blocks. \$\psi\$ 10 dis 25 \( \) Differential Pulley Blocks. \$\psi\$ 200.  \( \) dis 20 \( \) Tackie, Rope and Iron Strapped (The Penfield B. \( \) W. \$\psi\$ dis 26 \( \) dis 26 \( \) dis 26 \( \)	SSE
Blind Adjusters. Domestic # doz \$0.00, dls 20 5     Blind Finsteners. Mackrell's   \$0.00, dls 20 5     Van Sand's   No. 2000, \$14.00, dls 26 5     Old pattern.	S
Hind Adjusters.—Domestic\$\psi\$ dos \$\psi\$0.00 dis 20 \( \) Hind Fasteners.—Mackrell's \$\psi\$1.40.0 dis 20 \( \) Van Sand's. No. 2000, \$\psi\$1.40.0 dis 26 \( \) Van Sand's. No. 2000, \$\psi\$1.40.0 dis 26 \( \) Washburn's Fatent. \$\psi\$ gross, \$\psi\$1.50, dis 26 \( \) Werriman's.  Hind Staples.  Bind Staples.  Gardman's Fatent. \$\psi\$ in and larger. \$\psi\$ 20 \( \) Boother Bind Staples. \$\psi\$ in and larger. \$\psi\$ 20 \( \) Harvey's Patent. \$\psi\$ 6 \( \) \$\psi\$ 10. \$\psi\$ 25 \( \) Harvey's Patent. \$\psi\$ 6 \( \) \$\psi\$ 10. \$\psi\$ 29 \( \) Harvey's Patent. \$\psi\$ 6 \( \) \$\psi\$ 26. \$ \text{in}\$ 10. \$\psi\$ 29 \( \) Harvey's Patent. \$\psi\$ 6 \( \) \$\psi\$ 10. \$\psi\$ 29 \( \) \$\psi\$ 30. \$ \text{in}\$ 10. \$\psi\$ 29 \( \) Hocks.—Burr & Co. \$ \text{dis 25}\$ 50 Inferential Pulley Blocks.  Tackle, Rope and Iron Strapped (The Penfield B. W.) Le and Level Co. \$ \text{dis 313}\$ 28 \( \) 50 \$ \text{Hower's.}\$ \$ \text{Reyes and Iron Strapped (The Penfield B. W.) Le and Level Co. \$ \text{dis 335}\$ 28 \( \) 50 \$ \text{Hower's.}\$ \$ \text{Reyes tone Portable Forge Co. \$ \text{dis 60.20 }  \text{Sulfar 60.00 }  \text{dis 60.20 }  \text{Cast Iron Cbain (Sargent's list). \$ \text{dis 60.20 }  \text{Cast Iron Cbain (Sargent's list). \$ \text{dis 60.20 }   \text{dis 60.20 }  \text{Cast Iron Cbain (Sargent's list). \$ \text{dis 60.20 }   \text{dis 60.20 }   \text{dis 60.20 }    \text{dis 60.20 }     \text{dis 60.20 }       \text{dis 60.20 }                                                                       \qua	S FINAL FILSMAN
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Blind Adjusters.—Domestic\$\psi\$ dos \$\psi\$0.00 dis 20 \text{Slind Fasteners.}\$\text{Mackenle's}\$ \$\psi\$1.00 dis 30 \text{Sun Sand's}\$. No. 200, \$\psi\$1.00, dis 26 \text{Sin Some Sand's}\$. No. 200, \$\psi\$1.00, dis 26 \text{Sin Some Sand's}\$. No. 200, \$\psi\$1.00, dis 26 \text{Sin Some Sand's}\$. No. 200, \$\psi\$1.00 dis 20 \text{Sun Merriman's}\$. Testent. \$\psi\$ gross, \$\psi\$1.00, dis 20 \text{Sin Some Sand's}\$. Now the set is 100 \text{Merriman's}\$. Testent. \$\psi\$ gross, \$\psi\$1.00, dis 20 \text{Sin Sin Some Sand's}\$. The set is 100 \text{Marriman's}\$ fatent. \$\psi\$1.00 \text{Marriman's}\$ faten	S F CCCCEECEN
Blind Adjusters.—Domestic\$\psi\$ dos \$\psi\$0.00 dis 20 \text{Slind Fasteners.}\$\text{Mackenle's}\$ \$\psi\$1.00 dis 30 \text{Sun Sand's}\$. No. 200, \$\psi\$1.00, dis 26 \text{Sin Some Sand's}\$. No. 200, \$\psi\$1.00, dis 26 \text{Sin Some Sand's}\$. No. 200, \$\psi\$1.00, dis 26 \text{Sin Some Sand's}\$. No. 200, \$\psi\$1.00 dis 20 \text{Sun Merriman's}\$. Testent. \$\psi\$ gross, \$\psi\$1.00, dis 20 \text{Sin Some Sand's}\$. Now the set is 100 \text{Merriman's}\$. Testent. \$\psi\$ gross, \$\psi\$1.00, dis 20 \text{Sin Sin Some Sand's}\$. The set is 100 \text{Marriman's}\$ fatent. \$\psi\$1.00 \text{Marriman's}\$ faten	SAFT F CODERCE
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Blind Adiusters.—Domestic\$\times\$ dos \$\times\$_0.00 dis 20 \times\$ Blind Fasteners.—Mackrell's \$\times\$_1.00 dis 20 \times\$ Van Sand's.  No. 2000, \$\times\$_1.00 dis 2\times\$_1.00 dis 2\times\$_1.00 dis 20 \times\$ Washburn's Fatent.  Werriman's.  Berriman's.  Berriman's Fatent.  Hind Staples.  Boardman's Fatent.  \$\times\$_1.00 and larger.  \$\times\$_2.00 dis 2\times\$_1.00 dis 20 \times\$_2.00 dis 20 \times\$_3.00 dis 20 \tim	AS A GENERAL PROCESS OF ACE
Blind Adjusters.—Domestic\$\times\$ dos \$\times\$_0.00 dis 20 \times\$ Blind Fasteners.—Mackrell's \$\times\$_14.00 dis 20 \times\$ Van Sand's.  " old pattern. \$\times\$_Veross, \$\times\$_0.00 dis 26 \times\$ Washburn's Fatent. \$\times\$_Veross, \$\times\$_0.00 dis 26 \times\$ Washburn's Fatent. \$\times\$_Veross, \$\times\$_0.00 dis 20 \times\$ Hordward Fatent. \$\times\$_0.00 dis 20 \times\$ Hordward Fatent. \$\times\$_0.00 dis 20 \times\$ Hordward Fatent. \$\times\$_0.00 dis 25 \times\$ Differential Pulley Blocks.  Tackle, Rope and Iron Strapped (The Penfield B. W.)  Stanley Rule and Level Co. dis 33\times\$_0.00 dis 20 \times\$ Stanley Rule and Level Co. dis 33\times\$_0.00 dis 20 \times\$_0.00 dis 20 \time	CS 4 OTA HISART E COCHECEN BU CU 404 CHEES V
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Cotton dia 20&10 %  Wool dia 20&10 %  Carpet Stretchers.	G. Nie He Ma
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Casters.         Bed         dls 55 %           Bed         dls 55 %         Plate and Shallow Socket         dls 55 %           Deep Socket         dls 65 %         dls 40 %           Cattle Leaders.         dls 60 %         dls 10 % ro %           Humason, Beckley & Co.'s.         dls 60 %         dls 60 %           Sargent's.         dls 60 % co.'c % ro %         dls 60 %         co.'c %           Union Nut Co.         dls 60 % ro %         co.'c %         dls 60 %         co.'c % <td< td=""><td>Wa Fis Mo H.</td></td<>	Wa Fis Mo H.
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Sauli's Boss. W dos \$4.20, dis 402 5 7 Philadelphia 5 in., \$5.00; \$ in., \$7.00, dis 55 % Barker's Concealed dis 20 % Cowell's No. 1, \$18.00; No. 2, \$15.00 \$ doz. dis 20 %	D. I
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	Anti-Friction. dis Barn Door dis 70% to @ Novelty. dis 70% to @ Challenge.	75 dis 40 %
	Harness Snaps.  Henshaw's List of 136 changed to \$14.00, dis- Fitch's (Bristo) 14.00 is 14.00.	dis 50 % 50&10 % dis 50 % dis 10 %
	"German" fiatchets, Isaiah Blood Shingling, Nos. 1 2 3 \$\text{idoz \$7.25} \$8.00	dis 60 %
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Hay Knives. "Lightning".  Wadsworth's.  dis 30 %	Na Br
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ii. Lake Chalk Nos. o, 1, 2, 3, \$6.00, \$6.50, \$7.00, \$7.50	Mrs. Com Ba
Lake Chalk	
Asimiret-Caylord   dis 25&2	New Com Pate
Flat Key dis 35% 10 % Sarnes & Deitz, Flat Key dis 30% 20 % Cale Lock Co., Flat Key dis 40 %	Silve
nepartson's, rist key	Stee Sa Clar
DUOR LOCKS, &C.   dis fo&10&2 %	Fera Wal Han Nort
Copy   All   Color   Color	Mile Perr
Mallory, Wneeler & Codis 233/6&5 % Wm. Wilcox & Coand 2 % for cash D. K. Miller Lock Codis 25 %	Drav Ente Silve
Romer's dis 30 % Vulcan Hardware Co. dis 20 % J. H. McWilliams dis 10 %	Diss
### American Lock Hig. Co.   Gls 33% 5   ### Romer's   Gls 30 5   ### Vulcan Hardware Co.   Gls 20 5   ### J. H. McWilliams   Gls 10 5   ### Barnes & Dietz   Gls 30 5   ### Penn Lock Works   Gls 30 5   #### Vision's (P. S. & W.) Nos.   2   #### August   Gls 17,00 19,003,000   #### Gls 314,00 17,00 19,003,000   ##################################	H. V
Dixon's (P. S. & W.) Nos. 1 2 3 4 4 6 2 4 6 2 4 6 2 4 6 2 4 6 2 4 6 2 4 6 2 4 6 2 4 6 2 4 6 2 4 6 2 4 6 2 6 2	E. M
(tles' Challenge	Whe
Oraw CutNos. 5 2 6 8 10	1
Nos 1 2 3 4 B 5	Red.
tobbine Dettern	Boyi Still
Genuine   dis 66&10     Genuine   dis 66&10     Tinned Ends   dis 40&10     Tinned Ends   dis 40&10     Tinned Ends   dis 20     Tinned Senuine   dis 20     Tinned Genuine   dis 60     Tinned Genuine   dis 60     Tinned Genuine   dis 15     Tinned Genu	Com Leac Nash Ham
ronnet	Bem
alis. See Trade Report uare and Haxagon. 7c off list Nut Crackers able (Humason & Beckley Mfg. Co.). dis 33/5 5 lake's Pattern. # doz \$2.35, dis 10 5 Cakkurs.	Sc
lake's Pattern	Unio

net	Navv. # B 7140
30 %	Brass and Copperdis 40 %
0%	Maileable (Hammer's)
0%	Navv
10 %	Faber's Carpenters dis to \$ Round Gilt
0%	Dixon's Lead
0%	Lightning
0%	Briefs Fatent or "Paragon" dis 10.5  Ox Halls place of the property of the pro
0 %	Porcelain Head, T. & S. Mfg. Co
0 %	Plaiting Machines.  Magic
aet	Astor Plaiting Machineeach \$15.00, dis 20 % Crown Plaiting Machinesdis \$
5%	Planes and Plane Irons.
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の第	Bailey's "Victor" " dis 25&10 % Defiance Adjustable, new list
5%	Plane Irons, Butcher's
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0%	D. R. Barton Tool Co
5%	Ohio Tool Codis 10 % Spear & Jackson's\$5.00 to £ gold
5%	"Sandusky Tool Co. dis rok To g Pliers and Nippers. Button's Patent. dis 334 g Hull's Patent Nippers, No. 1, \$15; No. 2, \$2.1 \$\tilde{\psi}\$ dos, dis 23 Humason & Beckley Mig. Co. dis 234 g Gas Pliers. dis 2025 g Eureka Pliers and Nippers. dis 25 g Eureka Plers dis 26 g Eureka Plers dis
130	Hull's Patent Nippers, No. 1, \$15; No. 2, \$21 \$\tilde{V}\$ doz, dis 25 \$\tilde{S}\$ Humason & Beckley Mfg. Co
2%	Gas Pliers
2 %	P. S. & W. Cast Steel
0%	Disston's
5%%	Chapin's
5 % 5%	Non-Adjustabledis 60&10 %  Johnson's Patent Adjustabledis 60&10 %
5 %	Chapin's
200	Post Hole and Tree Augers. Samson Post Hole Diggerper doz \$36.00, dis 20 \$ Fletcher Post Hole Augers
	Vaughan's Post Hole—
lis	Pietciner Fost Fole Augers   40 or 30.00 dis 20 s   Vaughan's Post Hole   6 in. \$23.60; 7, 8 and 9 in. \$25 per doz.   dis 20 s   Leed's   \$5.00 each, dis 30 s   Pointo Parers, &c.   \$2 doz \$13.00 dis 10 s
)	M.Camptone !! Declar and Clines 10 dec a co di
15	Discton's Combined Prining Hook and Saw
15	Pruning Hook 11.50, dis 20 %
et lis	Judd's Axie.         # doz \$0.00         4 doz \$0.00         4 doz \$0.00         5 doz \$0.00         6 doz \$0.00
et	Brass Screw
et	Jap'd Side. dis 66%&tr. \$  Clothes Line dis 66%&tr. \$  Clothes Line dis 66%&tr. \$  Hay Fork Solid Eye, \$4.57; Swivel, \$5.00, dis 4c&to&to. \$  "Anti-Friction," \$7.50 dis 20 \$  Punches
et et	Punches.
16	Spring
16	"Anti-Friction," \$7.50 dis 20 \$  Punches.  Telt or Drive \$2.000 \$2.000 \$2.000 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$2.500 \$
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5	Imitation Emerson
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ry	Rivets, Iron and Tinneddis 50 %
2000	In bulk, new list of Jan. 10, 1878
×	Saunder's.   dis 10 @ 15 \$   Iron and Tinned.   dis 50 \$   Ino nand Tinned.   dis 50 \$   Ino hulk, new list of Jan. 10, 1878   dis 40 \$   Copper Rivets and Burs.   dis 10 \$   X \$
8.	Rods
NAME OF	Stair
8	Holiers, Sargent's list. dis 70% & 10 % Noveity. dis 10 % Acme (Anti-Friction). dis 0 %
ŝ.	"American Patent   dis 33\sqrt{5}   Kollers
8	
M S	" Lath Yarn \$\pi\$ 133\c) " Hay Rope. \$\pi\$ 125\c)
MMM	Sisai
8 8	" Hay Rope
8	Chapin'sdis Stanleydis dis 60. dis 50&10 %
XX	"Hay Rope Boxwood. Vory. Chapin's dis Stanley dis Stanley dis Stanlerd dis Stephens dis Willis, Thrall & Son. dis Stephens dis solt of Stephens dis solt of Stephe
* J	Stearn's
g l	From 4 to 10 108. We don \$8.75 net
100	Stearn's. dis 40x10 \$\frac{1}{2}\text{ind irens.} \tag{ Bs 40x10 \$\frac{1}{2}\text{ind irens.} \tag{ Bs 2\frac{1}{2}\text{c} net } \text{Self-Heating.} \tag{ Bs 03 \$\frac{3}{2}\text{5} net } \text{Gleason's Shield and Toilet.} \tag{ doz \$\frac{3}{2}\text{5} net } \text{Gleason's Shield and Toilet.} \tag{ doz \$\frac{3}{2}\text{5} net } \text{Gleason's Shield and Toilet.} \tag{ dis \$\frac{3}{2}\text{5} \text{Enterprise Patent Cold Handle.} \tag{ dis \$\frac{3}{2}\text{5} \text{Shield and Iron.} per doz \$\frac{3}{2}\text{5} \text{Combined Fluter and Sad Iron.} per doz \$\frac{3}{2}\text{5} \text{Combined Fluter and Sad Iron.} \text{per doz \$\frac{3}{2}\text{5} \text{Combined Fluter and Sad Iron.} \text{per doz \$\frac{3}{2}\text{5} \text{Combined Fluter} \text{Combined Fluter and Sad Iron.} \text{per doz \$\frac{3}{2}\text{5} \text{Combined Fluter} \text{7}
N.N	Combined Fluter and Sad Iron. per dox \$15.00, dis 15 \$
t	Baeder & Adamson's Flint, oo to 116 \$4.25 \( \) ream
K 157	Combined Futuer and sad ironper doz #15.00, dis 15.  Sand Paper.  Baeder & Adamson's Flint, oc to 1:6 \$4.25 \( \) ream  2.25 \( \) & 2. 4.75 \( \) ream  3. 25 \( \) & 2. 4.75 \( \) ream  15. 25 \( \) & 2. 25 \( \) ream  15. 25 \( \) ream
100	New England, same list as B. & A. Flint dis 15@20 % Sash Cord. Common
3	Common. \$\psi\$ b t6 g sec net Patent. \$\psi\$ b t6 net Silver Lake Russia Flax. \$\psi\$ b 50 net White Cotton. \$\psi\$ b 500 net Drab Cotton. \$\psi\$ b 600 net
N W W	White Cotton B 550 net  Raw Hide
×	Raw Hide
E S	Sash Locks.  Clark's, No. 1, \$10.00; No. 2, \$8.00 per grossdls 40@45 \$  Ferguson's
188	Walker's. dis 26 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
8 8	Sausage Stuffers or Fillers. P doz \$20, dis 30 %
8	Sansage Stuffers or Fillers.   P doz \$30, dis 30 5     Miles
8 %	Silver's
X	Mill dis 30 % Cross Cut dis 20 %
8	H. W. Peace's Circulars. dis 25 8
70	"Cross Cut, Wood, Hand. &cdis 20 \$ E. M. Boynton's Lightning, Cross Cutsdis 20 \$
2	One-Man, all lengthsdis 40&5 %  Buck Saws (X Bar) # doz \$15, dis 40&10 \$  Billet Webs
5	Silver
S.	Livingston's Butcher and Kitchen
g	Nos 101 102 103 104 105 Per doz\$10.00 8.40 10.00 7.40 6.25 net
×	Saw Frames.  White, Vermont.  Red. Polished and Varnished.  \$\frac{1}{2}\$ doz \$1.35, dis 15.5  Saw Rods.  \$\frac{1}{2}\$ doz \$2.00, dis 15.5  Saw Rods.  \$\frac{1}{2}\$ stollist dis \$1.55  Saw Sets.
	Saw Rods
XXX	Stillman's Genuine
XX	Saw Rods
X 1%	Nach's.  No. 1, 82.9; No. 2, \$5.0, dis abstor Nach's.  Hammer, Hotelskins.  Bemis & Call Co. 5 New Pat.  dis sabor 5  Bemis & Call Co. 5 new Pat.  dis sabor 5  Hammer, New Pat.  dis sabor 5  Hammer, New Pat.  dis sabor 5
2 %	Bemis & Call Co.'s Spring Hammer, New Pat. Lever. dis 202:0 5
	" Imitation
K K	Scales. Hatch, Counter
1	Union Platform

Julio 27, 10101		HE INON AGE
Fairbanks'dis sode \$	Weather Strips.  Protective Ventilator Co. s	No.25
Fairbanks	Wire. Brass and Copper List of Jan. 1, 1878 dis 10 %	No.26. 422 486 52 No.27. 414 49 53 .00 No.28. 49 53 .00 No.20. 42 65 .64 No.20. 55 59 .69
Chiversal Family	Nos. 27 @ 30, dis 525 @ 6 5 5	No.50
Scrapers.  Box, I Handle	Galvanized, Nos. o to 6	NO.33
Scrapers	Tinned, Nos. o to 18. dls 45 @ 47% % Cast Steel. dls 25 @ 30 % Tinned Broom Wire, Nos. 18 to 25. dls 47% @ 50 %	Spring Wire 2c ♥ B advance. Flat, Square and Half Round Wire 3c ♥ B advance on Round Wire. Fancy Wire not less than 10c ♥ B advance of Round
snip (common) per doz \$5.00 net " (Providence Tool Co dis 10 \$ Screw Drivers.	Annealed Fence, Pos. 8 and 9	Fancy Wire not less than roc * b advance of Round Wire, Brass Rods, No. 8 and smaller not less than 2 feet
" (Providence Tool Co. dis so \$ Screw Drivers. Hart, Bliven & Mead, new list. dis 44kro \$ Douglass Mfg. Co. dis 34kro \$ Disston's. dis 45 \$ Disston's Patent Excelsior. dis 45 \$ Buck Bros. dis 65 \$ Buck Bros. dis 65 \$ Stanley Ruie & Lovel Cos., Black Handles. dis 34kro \$ Sargen & Co.'s. Varnished Fie. dis 44kro \$ Sections.	Protective Ventilator Co. 8	lengths, 45c. Wire straightened and cut, smaller than No. 8, and not less than 2 feet lengths, 45c.
Disston's Patent Excelsiordis 60 % Buck Brosdis 25 % Stanley Ruie & Level CosBlack Handlesdis 34% 10 %	"Staples, Galvanized	wire straightened and cut, smaller than No. 8, and not less than 2 feet lengths, spc. Wire and Rods less than 2 feet lengths, special rates. Twelve cents per b extra for spooling on 1 B spools. Miscrillankous. Common Plain Brass Pall Ears.
Sargen & Co.'s. Varnished H'le dis 148:10 %	Galvanized B b too Steel Music Wire, Nos. 12 to 27. B B St. oo. net Judd's Picture Wire	Common Plain Brass Pail Ears. \$0.40 Brass Door Rall 40
Flat H'd Iron list Sept. 1, 75. dis 55 % Round Head Iron dis 45 % Flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Flat Hand Brags list Sept. 1 % of the flat Flat Hand Brags list Sept. 1 % of the flat Flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 1 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept. 2 % of the flat Hand Brags list Sept.	Clothes Line Wire, Galvanized Fooil 45 @ 43c net Wire Cloth.  Clinton, green or drab, by the roll, per sq. ft. 34c net	High Brass Scrap SCRAP. 13C Low 15C Gilding 17C Turnings, Filings and Chips half the price of Scrap. Terms—Not cash. Interest to be added after thirty
Round Head Brass. list Sept. 1, 75. dis 35 Brass and Silver Capped dis 40 %	Wrenches. American Adjustable	Turnings, Filings and Chips half the price of Scrap. Terms—Net cash. Interest to be added after thirty
Lag or Common Coach dis 65 Coach, Patent Gimlet Point dis 46 64 5	" Diagonal	days.  TUBING.—dis 10 % P B Plain to No. 20 inclusive, above 1/4 in. to 3 in\$0.40
Sargen & Co.'s	Clinton, green or drab, by the roll, por sq. ft. 3\dc net	" above 3 in
" Wood, Reach . \$\vec{\pi}\$ doz \$3.00, net " Hickory	Clindsay's   Cliss 50&10&10 %	Nos, 24, 25, 26, four cents advance on List for each Number. Above No. 26, special rates.
Hand Rail, Sargent's	Bemis & Call's Patent Combination	Plain, \( \) inch
Jack Heil Bottom       dis 20%         Jack (Wilson's)       dis 30 %         Sash (T, & S, Mfg, Co.)       dis 25%	" Briggs' Pattern dis 25&10 % " Cylinder or Gas Pipe dis 25&20 % Aiken Pocket (Bright) \$8.00, dis 50&10 %	All Mandrel Drawn Tubes, 5 cents advance on List Prices. Fancy Tubing to No. 20.
Scythes. Blood German Steel, Grass P doz \$10.00   Cast. 9 doz 11.00	Wringers. Per dos. Universal, Cog Wheels, No. 21/6	Fancy Tubing to No. 20
Silver "	Crown No. 2. 71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.00 (71.	vance on List. Add to 2 cents % cent for each additional cutting under 2 feet.
* Excelsior and Granger. # dos 11.00 dis \$1.50 Young America	" No. 3 60,00 Eureka, No. 1 57,00 Novelty, No. 10, with Cog Wheels 60,00	under 2 feet. All Mandrel Drawn Tubes under 34 ln., 25 cents per pound advance.  ZINC TUBING.—net.
Wadsworth's Grass dis 40 % Bush dis 20 %	Excelsior, No. A, with Folding Beach. 84.00	Piain
Shears and Scissors	Alken Pocket (Bright). \$8.00. dis \$0.810 \$ \$0.810 \$ \$0.810 \$ \$0.810 \$ \$0.810 \$ \$0.810 \$ \$0.810 \$ \$0.810 \$ \$0.810 \$ \$0.810 \$ \$ \$0.810 \$ \$ \$0.810 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Plain
Seymour's Straight Trimmers	Peerless, No. 2 63.00 No. 3 71.00 No. 2½6 60.00	9
Barnard's Lamp Trimmers. # 402 \$3-75 @ \$5 o net Barnard's Lamp Trimmers. # 602 \$3-75 Tinners'. # 618 20 %		10
Ball's Pat. Solid Steel Bentgo'd, net Inches 5 534	Stamped Tinware. Common Stamped Ware, L. & G. List, April, 1878, dls 50&10 % Stamped Deep and Retinned Ware, L. & G. List,	STEEL.—Dutt: Bars, Ingots, Sheets and Coils, valued at 7 cents P b., or under, 244 cents: over 2
Per doz	Stamped Deep and Retinned Ware, L. & G. List, April, 1878	cents, and not above 11, 3 cents ♥ B; over 11, 3% cents ♥ B, and to % ad val. Railway Bars, 1% cents ♥ B. Railway Bars, 1% cents ♥ B. Provided
R. & E. list	METALS.	that Metal cemented, cast or made from Iron by the Bessemer or pneumatic process, of whatever form or description, shall be classed as
Per dos	1RONDury: Bars, 1 to 136c. ₩ m: Sheet, Band	18 " 1.55  STEEL.—DUTY: Bars, Ingots, Sheets and Colls, valued at 7 cents \$\pi\$ \$\mathbb{n}\$, or under, \$2\pi\$, cents; over, 7, cents, and not above 11, 3 cents \$\pi\$ \$\mathbb{n}\$, or under, \$2\pi\$, cents; over, 7, cents, and not above 11, 3 cents \$\pi\$ \$\mathbb{n}\$, and 10 \$\pi\$ ad val. Railway Bars, it dents \$\pi\$ \$\mathbb{n}\$. And 10 \$\pi\$ ad val. Railway Bars, it dents \$\pi\$ \$\mathbb{n}\$. And 10 \$\pi\$ ad val. Railway Bars, it dents \$\pi\$ \$\mathbb{n}\$. And 10 \$\pi\$ ad val. Railway Bars, it part Steel, I cent \$\pi\$ \$\mathbb{n}\$. Provided, that Metal cemented, cast or made from 10 no hy the Hessemer or pneumatic process, of whatever form or description, shall be classed as \$\mathbb{n}\$. The coll.  Tool. American Cast Steel.  Tool. American Cast Steel.  Tool. Steel. 12\pi 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Moore's Anti-Friction Shovels and Spades. Ames. dia 2014	HONDUTY: Bars, 1 to 13cc. # m; Sheet, Band Hoop and Scroll, 13ct o 13cc. # m; provided, that none of the above Iron shall pay a less rate of duty than 35 per cent. Pig. #7 # ton; Polished Sheet, 3c. # m; Wrought Scrap, #8 # ton: Cast Scrap, #6 per ton. Pig. Iron - AMERICA.   Foundry - AMERICA.   # ton #16.0 @ 18.cc.	Homogeneous. 125gc Boller Plate 8c Tire. 8c
not stamped "Ames" dis 37% Rowland's. 418 50 Kimball Shovel Co. dis 20 6 20 6 20 6 20 6 20 6 20 6 20 6 20	wrought Scrap, \$8 \( \pi\) ton: Cast Scrap, \$6 per ton. Railroad oc. \( \pi\) ton \( \pi\) Boller and Plate, 1/gc. \( \pi\) \( \pi\). Pig Iron—American.	Machinery (round and square) 9c File 9c Sheet 9c
Old Colony dis 30 5 Middleboro' Shovel Co. dis 30 5 Remington's (Lowman's Patent). dis 30 5	Foundry No. 1	Saw Plate, mill and mulay
Dunning's Shovels and Scoopsdis so&7\(\frac{6}{6}\) \( \) B. Rowland & Co., Anchor Brand dis \$6\(\frac{7}{6}\) \( \) Patent. dis \$6\(\frac{7}{6}\) \( \) (dis \$6\(\frac{7}{6}\) \) (dis \$6\(\frac{7}{6}\) \( \) (dis \$6\	Scotch   Scotch   Second   Scotch   Second   S	Tool
Oxford Patent. dis 40 % Shovels and Tongs. lead R. & E. list dis core &	Coltness. # ton 24.00 Rails. Iron, at mill. # ton \$32.00 @ 35.00	Spring Ph 8@ 9C Machinery Ph 8 @ 10C
Polished Steel	Rails.   F ton \$32.00 @ 35.00   Steel. "   F ton \$32.00 @ 35.00   Steel. "   F ton \$3.00 @ \$4.00   Old Rails.   F ton 18.00   Scrap.	English Steet.—Payable in gold, net.
Slates. Square Frames, Round Cornered, by casedis 70 % Less than a case	Common From Store,	** Round Machinery, Cast. ** b 100 180 180 180 180
Less than a case. dis 640 5  Spoke Shaves.  Deflance Metallic. new list, dis 2540 5  from dis 2540 5  from dis 2540 5  from dis 2540 5  From dis 25 7  Railey's. dis 2670 5  Spoke Trimmers.  Bonney's. ? dos 20.00, dis 25  Stearn's. ? dos 20.00, dis 25  Less ? No. 1, \$15.00; No. 2, \$22.00 ? dos, dis 265  Douglass'.  Spoons.	% to 2 in. round and square	"Best Cast
Wood dis 30 % Railey's dis 24% to % Spoke Triumers.	Refined Iron:	" 3d quality. # b oc ad quality. # b sc Sheet Cast Steel, 1st quality. # b 15%c
Bonney's. # doz \$10.00, dis 40 % Stearn's. # doz \$10.00, dis 40 % Ives'	Rods—56 and 1:-10 round and square P b 2:10 Bands—1 to 6x3-16 to No. 12. P b 2:40	" 2d quality # B 146cc ANTIMONY 13 to 136cc
Douglass'	Swedish Iron: Ordinary sizes. Sheet Iron. Common American. R. G. American.	LEAD.—DUTY: Pig \$2 \( \Pi \) 100 \( \mathbb{D} \) 5 ; old Lead, 1\( \frac{1}{2} \) C \( \mathbb{D} \) Dipe and Sheet, 2\( \frac{1}{2} \) C \( \mathbb{D} \) b.
Basting	Nos. 10 to 20	American
L Boardman's Sons, A1	21 to 24.	Tin Lined Pipe
Douglass	7.	ANTIMONY  LEAD.—DUTY: Pig \$2 \( \pi \) 100 Bs; old Lead, 1360 \( \pi \) BP Pipe and Sheet, 376 \( \pi \) B.  American.  \$\frac{3}{2}\pi \) 0 Bs; old Lead, 1360 \( \pi \) BA  American.  \$\frac{3}{2}\pi \) 0 a c Bar.  \$\frac{3}{2}\pi \) 0 a c Bar.  \$\frac{3}{2}\pi \) 0 a c dis 10 \( \frac{3}{2}\pi \) 0 c dis 10 \( \frac{3}{2}\pi \) 10 c dis 10 \( \pi \) 10 c dis 10 c dis 10 \( \pi \) 10 c dis 10 \( \pi \) 10 c dis 10 c dis 10 \( \pi \) 10 c dis 10 c dis 10 c dis 10 \( \pi \) 10 c dis 1
German Silver (Hall & Elton)	25 to 20, " 等 b 794c; " 彩 b 6/4c; " 彩 b 6/4c; " 彩 b 7 c " 38 " 彩 b 9 c; " 彩 b 7 c	TIN.—DUTY: Plates, Sheets, Tagger and Terne, I.i.e & b; Elecro-galvanized Plates, 2c & b; Manufactures of, not enumerated, 35 per cent. ad. val. Bars, Block
Tin (P. S. & W.), Teas. \$1.50 \(\pi\) gross, net Tin (Cowles Hdw. Co.). \(\psi\) 22.50 \(\pi\) gross, net dis to \(\pi\)	Patent Planished       # B A, 10½c; B, 0½c         Russia, Nos. 8 to 16       # B II @ II¼c         American Cold Rolled       # B b 4½c	and Pigs free. Banca, subject to duty of 10 per cent.  Banca
Stocke and Dies dis 20 %	COPPER.—DUTY: Pig. Bar and Ingot, sc; Old Copper, 4c * * * ; Manufactured (including all articles of which Copper is a component of chief value), 45 % ad	English
11 A = 514 a = 5	valorem.	I C 10X14   Prime Charcoal
Sand Stone	American Ingots, Braziers' Coppers, Boths, &c. Braziers' Copper, ordinary sizes, over 16 oz., # 8q. ft. Braziers' Copper, ordinary sizes, 16 oz. and over 12 oz., # 8q. ft. Braziers' Copper, ordinary sizes, 16 oz. and over 12 oz., # 8q. ft. Lighter than 10 oz. # 8q. ft. # D. 30c Circles less than 84 in. in diameter Circles 84 in. dismeter and over # D. 30c Segment and Pattern Sheets # D. 30c Segment and Pattern Sheets # D. 30c Segment and Pattern Sheets # D. 30c Septenting Copper, over 12 oz. # 8q. ft. # D. 26c Bolt Copper Bottoms # B. 26c Bott Copper Bottoms # B. 26c No Copper Is Sheathing except 14x48 Inches and not to exceed 34 oz. to the 8q. ft.  14x48, by the case # Sheet 8c.  O'NEILL'S PATENT PLANISHED COPPER.	14×20) D C 12½×17 ** 5.75 @ 6 00
Arkansas Stone,	over 12 oz., # sq. ft	For each additional X add
Turkey Oil Stone	Circles less than 84 in.1 n diameter # b 34c Circles 84 in. diameter and over # b 34c Segment and Pattern Sheets # b 31c	Best.   2d quality. Ordinary.   I C 10x14
Stove Polish.  Joseph Dixon's	Locomotive Fire Box Sheets # D 28c Sheathing Copper, over 12 oz. # sq. ft. # D 26c Boit Copper. # D 28c	
Ruby         \$\pi\$ gross \$\frac{3}{2}, 7c, net           Gold Medal         \$\pi\$ gross \$\frac{4}{2}, 5c, net           Rising Sun         \$\pi\$ gross \$\frac{4}{2}, 7c, net	Copper Bottoms	Prime Char. a quai. Coke. I C 14x2c. \$5.87\% (6.75 5.50 \overline{\overline{\chi}} 5.50 \overline{\overline{\chi}} 5.50 \overline{\overline{\chi}} 5.25 \overline{\overline{\chi}} 5.50 \overline{\overline{\chi}} 5.23 \overline{\chi} 5.50 \overline{\overline{\chi}} 5.50 \overline{\overline{\overline{\chi}}} 5.50 \overline{\overline{\overline{\overline{\overline{\overline{\overline{\o
Rising Sun. Squares. Steel. dis 50 %; full cases, dis 50&10 \$\); from dis 50 %; full cases, dis 50&10 \$\); from dis 50 %; full cases, dis 50&10 \$\); except from dis 50 %; full cases, dis 50&10 \$\); except from dis 50 %; full cases, dis 50&10 \$\); except from dis 50 %; except from dis 40% for \$\); from dis 10% for .	14x48, by the case	IX 20X28
Nickel Platedadd \$2.50 @ \$4.00 \( \text{doz}, \text{ net} \) Cash Try Squares and T Beveis	For tinning both sides, double the above amount. O'NEILL'S PATENT PLANISHED COPPER. 14X48.	SOLDER
Disston's Try Squares and T Bevels	t 4 and fox. and heavier. # ₺ 540 By the case. # ₺ 350 to # ₺ \$60 By the case. # ₺ 350 \$70 \$70 \$70 \$70 \$70 \$70 \$70 \$70 \$70 \$7	100 bs. American, cash
Tacks, Brads, &c. List of May, 1878	7 in., 14X52. 8 in., 14X56. 9 in., 14X60. 14 and 16 oz. and heavier. \$\psi\$ 36c By the case. \$\psi\$ 35c (And all sizes not over 20 in. wide.)	ZINC.—DUTY: Pig or Block, \$1.50 \$ 100 bs. Sheet, 24c \$ b. Sheet, Cask
Double-Pointed Tacks. dis 4 & 5 Tap Borers. Common and Ring. dis 20 % 10 %	14 and 16 oz. and heavier \$ 70 38c	" Open
Ives' Tap Borers. dis 10/210 % Enterprise Mfg. Co. dis 20 % Tapes. Measuring.	Drawn A Channa Cause the Standard for Water of Chil	Paper Stock, Old Metals, &c
Double-Fointed Tacks. dis #&5;  The Borers. dis octo 5  The Borers. dis octo 5  The Borers. dis octo 5  Enterprise Mg, Co. dis octo 5  Enterprise Mg, Co. dis octo 5  Enterprise Mg, Co. dis octo 5  Topes, Mensuring. dis 20 25  Spring Tapes. dis 26% to 5  Thermometers. dis 26% to 5  Thermometers. dis 26% to 5  Tobacco Cutters. dis 66% to 60;  Wood Bottom. # doz \$12.00, dis 26% to 8  All Iron. # doz \$13.00, dis 26% to 8  All Iron. # doz \$13.00, dis 26% to 8  All Iron. # doz \$10.00, dis 26% to 8  Truners' Tools and Machines.  Machines (P. S. & W.) dis \$600 5  Truners' Tools and Machines.  Machines (P. S. & W.) dis \$600 5  Truners' Tools and Machines.	BRASS MANUFACTURERS' PRICE LIST.  January 1, 1878.  Cash prices for Roll and Sheet Brass. For less quantity than 100 Bs. add 30 \$\psi\$ bs.  HIGH BRASS.	Canvas linen
Tin Case	tity than 100 Bs. add 30 F B. HIGH BRASS. All Nos. not thinner than to No. 28, wider than 2 in.,	White linen rags, No. 1. 44 @ No. 2
Wood Bottom.	not wider than 14 In. 27c All Nos. to No. 28, inclusive, and widths over 14 to 20 in., inclusive. 33c All Nos. to No. 28, inclusive, and widths over 20 to	Mixed woolens
Toe Calks, -Winsted # B roc di 10 % Tuners' Tools and Machines, Machines (P. S. & W.).	All Nos. to No. 28, inclusive, and widths over 20 to 30 in., inclusive 370 to 40, 7 h advance on each No. above Nos. 28 to 38, in-	Jute Butts. 3 @ 3½ Kentucky bagging. 3 @ 3½ Waste paper and scraps.
Tools (P. S. & W.). dis 146920 % Traps. Game, Newhouse. dis 20 %	clusive. All Brass thinner than No. 38 is Platers' Brass, at50c Sheets 24x48, and all sheets cut to particular sizes	Rope cuttings. 1½ 6 3 Kentucky bale rope 4 6 4½ Oakum junk, No. 1 4 6 4½
Tools (P. S. & W.)	clusive. All Brass thinner than No. 38 is Platers' Brass. at 50c Sheets 24x45, and all sheets cut to particular sizes and lengths under 30 in., in width wider than 2 in. 36c Printers' Ruies. 46C Sheets wider than 30 in. and under 40 in 45c Circular Sheets, in diam. from 4 in. to 14, inclusive 39c	Canvas linen. (Dealer's Selling Price.)  Canvas linen. 4
"Patent Choker (Union Nut Co)	40 in. and over	White collar cuttings, all paper
Cage " Patent Self Setting P doz \$2.50, dis 10 % Patent Self Setting P doz holes, 15C, net Catch-em-alive P doz \$2.50, dis 10 %	44 44 45 30 4 30, 41480 44 44 45 40 11	Hard White Shavings, No. 1. 4 9   Soft "No. 1 316 9   White Shavings, No. 2 324 9
Rat, "Decoy" per doz \$10.00, dis 10 % Trowels, Lothrops Brick and Plastering dis 10 %	4c P B more than High Brass,	Imperfections, No. 2, best folded sheets414
Trowels.         dis 10 g           Lothrops Brick and Plastering.         dis 20 g           Disston's Brick and Plastering.         dis 20 g           Peace's Plastering.         dis 20 g           Clement & Maynard's.         dis 20 g           Rose's Brick.         dis 15 g           Brades' Brick         gold.         dis 15 g           Worrall's Brick and Plastering.         dis 20 g           Garden.         dis 10 g         dis 10 g           Triers.         dis 10 g         dis 10 g	Platers' or Gold Metal Sawed	Book Stock
Brades' Brick dis 15 % Brades' Brick gold, dis 20 % Worrall's Brick and Plastering gold, dis 20 %	FOR SLITTING.  Metal in width 2 in. to 1/2 in. to No. 28, inclusive, 1c. 1/2 in advance.  Metal, in width 2 in to 1 in., thinner than No. 28, 2c. 1/4	Newspaper Stock         194 66 2           Prints         156 66 2           Pure Manilas         284 66 274
Butter and Cheese	Metal, in width 2 in to 1 in., thinner than No. 28, 2c. ₩ b advance. Metal, in width 1 in. to ¼ thinner than No. 28, 3c ₩ m	Bogus Manilas and Hardwares. 1 G Commons 5 G G Binders Board Cuttings. 1 G 14
Tuyere Irons.	advance.  Metal, in width ¼ in. to ¼, inclusive, not thinner than  No. 28, 20. % B advance.  Metal, in width ¼ in. to ¼ thinner than No. 28, 50. %	Book Stock
" Wilsons (A. H. Hildicks) 40 to 100 lbs. 121%; net " "Orown" (A. H. Hildicks) 40 to 100 lbs. 121	Metal, in width 1/4 in. to 1/4 thinner than No. 28, 5c. #  b advance.  Metal, 1/4 in. in width and less, 1cc. # b advance.  Any of the above widths cut to particular lengths, add	Copper, heavy
" Peter Wrights. currency 41 20 % Parallel, Parker's. dis 20 %	Any of the above widths cut to particular lengths, add 70. \$\psi\$ German silver market metal and wire.	Vellow Metal
Wilson's dis 50 % Howard's dis 25 % Sargent's dis 50 %	GERMAN SILVER MARKET METAL AND WIRE.	Heavy Composition
Valcan Pattern   \$3.50 each, net   Vises   \$3.50 each   net   Vises   \$0   Identified   \$0   Identified   \$1.50   Identified   \$1.50	10 " "	Brass   light
Finite & Morris,	more than 16 Bs., \$2.25 W D.	Wrought fron
"Family," List	12 in., and 2c. w m on each No. timber than Nos. 25 to 36, inclusive All German Silver thinner than No. 35 is Platers, at	Machinery from
Huffalo	German Silver Scrap one-third less than net price of	Paints, Oils, &c.
Ventilators. Protective (upper) per foot, \$1.00. dis 25 %	and Chips, half the price of Scrap.  BRASS AND COPPER WIRE.  Gild'g and	Black Lamp, Coach Paintes.  Ordinary.  (a) Painters.  Ordinary.  (b) Coccept C
Ventilators. Ventilators. Ventilators. Ventilators. Ventilators. Valuer Custers. Valuer Custer	High Brass. Low Brass. Copper. No.0 to 20	" Ivory Drop, fair. 12 @ 15c best. 230
Appleton's	NO.22 34 38 44 NO.23 35 39 44 NO.23 35 39 45 97 41 47	Blue, Prussian, fair to best

Blue Chinese dry890	Sundr	ies.			
Ultramarine	Asphantum		2410, 11	111111	11 0
" Van Dyke	Chaik			T B	(83, 34)
Carmine, 40 combination price	Block				300
Green, Chrome 15 @ 230	Dryer, Patent, Am'n	susus 't	cans.	rolee : 1	keg.or
" In oll	Frostings				
	Glue, White			01	2 60 20
Iron Paint, Bright Red 300; 450	Glaziers' Points, Zinc				
From Paint, Bright Red # D 254C	Glaziers' Points, Zinc				2
Red. P B 20	Gum, Copal			******	** 30
ii Purnle 10 % ac	Bhellac, English	*****	******		284
" Purple	dark.	**> * * * *	******	****	2× - dia
Red 22 m co	Litharge, Englisgh			*******	o mais
Brown P D 4 oc	Pumic Stone, selected Lump	94			A OF TH
Purple P B Ge	" powdered				23.1
Mineral Paints14 @ 40	Putty, in bladders				754
Orange Mineral120	in bulk				
Red Lead, American	Rotten Stone, soft, English				9
English95gc gold	Spirits Turpentine				321
Venetian (N. C.) dry	Whiting Spanish				
" Indian dry	FRENCH WIND				
Rose Pink	Prices current pe				
Sienna, American, Raw	AL DESCRIPTION OF THE PARTY OF			t.	
Burnt	Single Thick	liscou	nt 50 %		
" In oil to se the an 200	SIZES.	Ist.	ad. I	30.	ath
Raw " account to the second to		-		-	-
Umper, Burnt	6 X 8 to 10 X 15	8 7.50	\$ 6.75		
" in oil	11 X 14 to 16 X 24		7-75	7.25	6,5
Raw316 (0) 7160	13 X 22 to 20 X 30	10.75	9-75	8.75	
Vermillion, Chinese	15 X 36 to 24 X 30	12.25	10.75	9.00	
English	26 X 28 to 24 X 36 26 X 37 to 26 X 44	13,00	13,25	9-75	
Trieste	26 X 46 to 30 X 50,	15.00	14.00	11.25	
" American, Common	30 X 52 to 30 X 54	16,63	14.50	12.00	
White Lead, American, pure dry 8e	30 X 50 to 34 X 50	17.25	15,50	13,50	
White Lead, American, pure dry	34 X 58 to 34 X 60	18,25	17.25	15,00	
White, Paris, English, prime in bhis, 2 on alce	36 x 60 to 40 x 60	20,75	18.75	17.25	
Yellow Ochre, French	Double Thick1	Discoul	nt body	n.e	
in oilasst'd cans, rie; kegs, 8e	personal transfer of the second				-4 No.
	SIZES.	ist.	2d.	301.	41 h.
Yellow Chrome	6 x 8 to 10 x 15	\$12.00	811.00	\$10.00	0.00
Zine White, American No. 1, dry	II X 14 to 16 X 24	13.75	12.50	11.75	
No. 1, in oil	18 X 22 to 20 X 30	17.25	15.75	14.00	
" French (Paris)	15 X 36 to 24 X 30	19.75	17.25	14.50	
" in oil 1016 @ 1116C	26 X 28 to 24 X 36	21.00	18,50	15.75	
	26 x 35 to 20 x 44	23.25	21.25	17.25	
Oils.	26 x 46 to 30 x 50,	24.00	22,50	18,00	
Linseed, Raw, in casks and bbls F gal. 570 @ 590	30 X 52 to 30 X 54	25-75	23.25	19.25	
" Bolled. " " " 620 \$ 040 Whale, Crude	30 X 56 to 34 X 56	27.75	25.00	21.75	
whate, Crudebbt. 45c @ 48c	34 X 58 to 34 X 60	29.25	27.75	24.00	
Bleached Winterbbl, 57c @ 60c			30,00	27.75	
"Unbleachedbbl, 53c @ 55c	Sizes above 40 x 60-\$10.00	per be	ox ext	ra for	every
Cotton Seed, Crude	five inches.	*******	o obou	nand #	on -91
Whitebbl, 600	An additional to per cent. Glass more than 40 inches v				
Neatsfoot, Winter	inches in length, and not ma	king n	ore th	an Sri	mited
Natural Lubricating	inches, will be charged in th	e 84 un	ited in	ches br	184
	amount of the contract of the con-				
				_	

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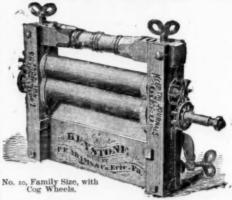
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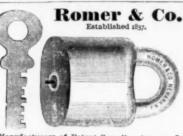


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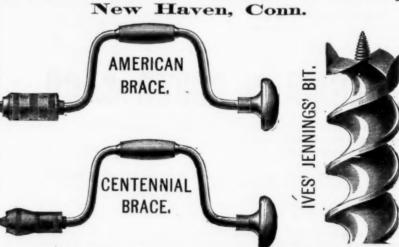
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Anvile.  Peter Wright's, \$\Pi\$ > 00d	Steve Pollsh Gem.   # gross, \$4*50, dts 5 %   Dixon.   #6*00, dts 5 %   Onyx.   #4*00 @ 4*25 net
Wilkinson's, w 5, gold	Tacks, Haif Weight American dis 75 g
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THE IC L' MADITO, COLC. WHAT WILCOLL	Dixon
Lots of 10 to 25 dozen special price.  Axes  Mann's Bed Warrior Per doz. \$8 50 @ 9 00 net Red Indian 8 50 @ 9 00 net Red Indian 9 10 @ 10 to net Crown Prince 9 10 @ 10 to net Augers and Auger Bits	Shoe Nails—  4-5 and larger, 9c; 34-8, 94c
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Grisword Auger Bias dis 500 de 50e5 \$  Jennings dis 10&10 & dis 10&10 & dis 20 & 50e5 & dis 10&10 & dis 20 & dis 20&10 & dis 2	Agricultural— # doz 10 in., \$3 60; 12 in., \$5 40 net; case dis 5 % Coes' (senume
All other Spring Balances. dis 20 %  Bells. dis 70 % 75 %  Bevin Bros. Mrg Co. Light Hand Bells. dis 70 % 75 %  Everas Partern Hand Bells. dis 50 % 50% 10 %	Wire.— Bright or Ann'd, No. 0 to 18
Conneil's Door Bel's	Coppered v to 18.   Copp
Chambers' No 1, 107 % boltt, each \$ 750 2, 43	Wire.—  Bright or Ann'd, No. 0 to 18. dis 57% @ 50 5  "No. 19 to 28. dis 61 6 62% \$  "No. 19 to 28. dis 62 6 6 50 6  "Coppered to 18. dis 62% 6 50 9  Coppered to 18. dis 62% 6 50 9  Tinned Broom Wire. dis 45 6 47 9  Galvanized, No. 7 to 18 Market list, at 8 90 6 26 8  Wringers.—Novetty No. 10. \$  More ty No. 2 60 00 net  Universal, No. 2% 60 00 net  No. 8 60 00 net
Refin and Common   Refine	" No 3 " 68 00 net
## without Augers. 7 00 drs 40&10 %  ### ## ## ## ## ## ## ## ## ## ## ## #	PITTSBURGH. Merchant Iron.
Stanley, Wought	Flat Bar. 1½ to 4x½ to 1 in1.80c 1½ and 1½x½ to ¾ in90c 4½ to 6x½ to 1½1.90c 1 and 1½x½ to ¾ in 2c 1½ to 6x1½ to 1½ in2.00c 1½. ¾ and ½x½ to ½ in.2.20c
American Bail	194 to 0x19 to 194 in2.200   95, % and 16x36 to 96 in.2.200
Cast Loose Joint, Narrow	174 to 0.4179 to 175 till 2.200   98, 94 and 4,878 to 95 lb. 2.000
Mayer's Loose Joint. dis 70 & 10 & 10 & 10 & 10 & 10 & 10 & 10 &	Horse Shoe Bar-all sizes. 2.800 Heavy Bands. 1 to 1948 and 5-162.100
** Narrow, Fast	Heavy Bands.  1 to 134x14 and 5-162.10c 34 to 3x14 and 5-162.0c 12 to 134x14 and 5-162.0c  Light Bands.  1 to 134x14 to 3-162.0c
Parker.         dis 60 % 00x10 %           Clark.         dis 60 %           Shepard         dis 66 % die 60 %           I A Porter         dis 66 % die 10 %	Light Bands, 3 to 8x% to 3-16 in 2.50c 3 to 8x% to 3-16 in 2.50c 3 and 3xx% to 3-16 in 2.80c 1\( \) to 2xxxx to 3-16 in 2.80c 1\( \) to 2xxxxx to 3-16 in 2.90c 3 and 3xxx to 3-16 in 2.30c 3 and 3xx
Huffer's. German Haiter and Coli. dis 334 @ 33½ @ 10 @ Chains. German Haiter and Coli. dis 3045 % gold Galvanized Pump. # B 10% c net	54 & 9-16, Nos. 13 to 16. 4-500 44 & 11-15, Nos. 17 to 20. 4-300 45 & 11-16, Nos. 17 to 20. 20. 3-800 46 & 13-16, Nos. 17 to 20. 3-800 16 & 13-16, Nos. 17 to 20. 3-800
Best Proof Con Chain—(Engilet).  113, 836 73 736 836 834 7c gold  115, 216 34 5-16 36 7-16 35 36 10 5	Same sizes & No. 11 and No. 12 2-10c, extra.    Hoop Iron.   \$4, & 9-16, Nos. 17 to 20. 4.80c   \$4, & 9-16, Nos. 13 to 16. 4.50c   \$4, & 11-15, Nos. 17 to 20. 4.80c   \$4, & 11-15, Nos. 17 to 20. 4.80c   \$4, & 11-15, Nos. 17 to 20. 3.80c   \$4, & 11-15, Nos. 17 to 20. 3.80c   \$4, & 15, Nos. 13 to 15. 3.50c   \$1, & 15, Nos. 13 to 15. 3.10c   \$1, & 15, Nos. 17 to 20. 4.80c   \$1, & 15, Nos. 17 to 2
Loose Joint	Ties. 1-10c * b extra for each gauge lighter.  Oval Iron.
Plate. dis 50&10 & Coffee Mills.—Box and Side. dis 25 g Enterprise dis 20 g Enterprise dis 20 g	74 to 1¼ in         2.200 l/s in         2.600 l/s in         2.600 l/s in         2.600 l/s in         30 l/s in </th
Cutlery.— wands to Clark, J. Russell & Co., Lamson & Goodnow Mfg. Co. and Meriden Cutlery Co., Manu facturers orices net	% to % in
Drawing Knives.— Hart Mig Cu.'s dis 65, 5&10 s Adjustante Handse dis 20 g	Sheet Iron. Charc'l No. 22 to 24,330c 450c No. 15 to 17,250c 450c No. 25 & 26,350c 50c No. 15 to 17,250c 450c No. 25 & 26,350c 50c No. 15 to 17,250c 450c No. 27, 370c 5,30c All Sheets, No. 28 and lighter, over 30 In. wide, not less than 2-toe, extra
Fry Pans. Tinned	All Shoets, No. 18 and lighter, over 30 in. wide, not less than 2-10c. extra.  Wood's Putent Planished Sheet. 1st quality (A)
Fy Pans.  Timed.  0 1 2 3 4 5 6 7 8 9 10 10 40 6 9 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10	Plate from-3-16 to 59 ln. thick
	Nos. 14 to 20
Spencer Spencer \$4 50 @ 4 75 £ gold Finting Machines Imperial—34 in. roll	count, 3 to 40%.  Roofing Iron, Corrugated or Crimped.
No. 0 1 2 5 6 7 8  **Files.** Nicholson	Roofing ron,   Corrugates or Crimpled.   Galvanized Common.   Black.   No. 20.   76, net cash   No. 30.   44c   Bridge Iron.
Crown—129 in. roll. 4 755 4 755 4 755 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Carnegie Brôs. & Co.'s list. Beams and Channels. Solld Wrought Iron Beams, a to role in year of
Favorite com. Fluter & Sad-1701. # doz \$20 dis 25&10 a  Hammers Yerkes & Plumb's	Solid Wrough Iron Beams, 3 to 10½ in x3o ft. \$\mathbb{P}\$ 3 c and a large in the la
Hanmond dis 25 % 30 % Hanmond dis 25 % 30 % Hanmond dis 25 % 30 % Hunt. dis 25 %	to make to sin we to
Hunt	1 in.x1 in. to 5 in.x3 in.  Angle Iron.  Equal Sided, xxx to 13(x1)(1 in
Hutt.  B ngea Strap and T Nos. 6 7 8 9 10  Ausable Pathed & P't dand Blued and Pointed 31 28 26 25 24 23  Globe Net 1st 26 23 21 30 19 18  Clinton Pollshed and Pointed 2 20 19 18 17  Clinton Pollshed and Pointed 2 20 19 18 18  Converge all sizes	Unequal Sided, 2x1% to 5x4 2.6c Square Root Angles, 2x2 to 356x336 2.6c Star Iron, 156x15 to 4x4 2.7c
Globe	
Discount on Ausable and Clinton, 20 s : Glone not	Fence and Brads.  rod to 6od
Decks and Knobs.	Told to 60d   \$8.50   \$4 and \$4   \$3.25     8d and 9d   \$2.75   \$6   \$4.00     6d and 7d   \$3.00   \$3.00     84 in
** doz	500   150   150   3.50   3.25   Lining.
No	¾ In.         7.00   ¾ In.         8.50           Tobacco Hhd.         8d.         3.25           1cd.         3.00   6d and 7d.         3.50           Clinch-All sizes         4.23
	Ctinch—All sizes         Stating.         4.72           5d.         3.50         3d.         4.25           4d.         3.50         3d.         5.50           In.         Finishing.         1½ to ½ in.         4.50           1½ "         6.50         2½ in.         4.25           1½ "         4.50         4.00           1½ "         4.00         3.75           5d od odd         3.25         4d.         4.00           8d odd         3.50         3d.         5.00           4d.         5.00         4.25         3d.         5.00           4d.         4.25         3d.         5.24           Boot Spikes—All sizes.         2.25         2.75           Boot Spikes—All sizes.         3.25         3d.         3.25
Pennsylvania Pattern. 9 50 @ 10 00 net Mainasses Gattes. 9 50 @ 10 00 net Mainasses Gattes. 10 20 %	Finishing. 134 to 134 in. 4.50 in. 5.50 234 iii. 4.25
Lincoin Stary & Clark's Peti cleum dis 625-62104 Landers, Frary & Clark's Peti cleum dis 20-6105 tirass Liquor Cocks dis 5-15	136 4.75 3 and over. 3.75 Casing and Box. 6d
Cork Lined         dls 65 @ 65&10 s           Bleat Uniters.—Dixon's         dls 25 @ 30 4           Woodruff         dls 25 @ 30 5	Fine Blued. 3d 5.00 4d 4.25 2d 5.25
BLOWE	Boat Spikes—All sizes
Enterprise Stuffers	Boat Spikes—All sizes
Long and Short Cutter.	***Eel. % to 2 in
Staniey's Adustable	5-16 and 2½ to 3 in
Hunrs Bickford \$7.00, dis 20&10 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.00 & 40.0	Knife, Tap, Die, Mill Fick, Drill—Ordinary sizes3e Machinery Steel—Round. 36 to 2 in
Stanley   Vory   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   108   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008   008	Machinery Steel - Round
# doz \$6'-59 7-60 9-90 1.1'00 11'00 12'00 12'00 12'00 150 200 21 300 150 200 21 300 150 200 21 30' 68' 25' 4' doz \$7'00 8'6' 10'6' 12'0' 11'6' 11'0' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7 15' 7	Solid Cast Steel Plow, 4 to 16 by 3-16 to 36 lin.   70
** doz\$700 8-67 10-67 12-67 14-67 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10-77 10	"Iron Back Plow," 4 to 16x3-16 to 36 In. 83-6c Soft Steel Center Piow, 4 to 16x3-16 to 36 In. 9c Landside and Cultivator, C. S., 36 In. thick 93-6c
Squares. Stalley dis 50%; full case, dis 50%10 g Try Squares, Stalley dis 45% 10 g Disston's Try Squares dis 45% Scythes.—Golden Clipper, Damascus Blade, Boxen	Circular Plow Coulters, 5-3a to \( \frac{1}{2} \) in. thick \( \frac{1}{12} \) if Reaper and Scythe \( \frac{1}{2} \) in thick \( \frac{1}{2} \) if Fork and Hoe \( \frac{7}{2} \) there are a ket Teeth, to length \( \frac{1}{2} \) Section (cuter Bars, C. 8. 884c \( \frac{1}{2} \) if German Spring Steel \( \frac{7}{2} \) if Cornstalk Cutter beveled to length \( \frac{1}{2} \) Section \( \frac{1}{2} \) in the control of the
and Sharpened	Finger Bar. 884c Cutter Bars, C. S. 854c German Spring Steel. 74c
Snarpened @ doz \$825 net	
Disston's Circular	17 to 20 g Se Common C st, 17 to 20 g. 10c
Rowland	Furnace, Floor and Straightening Plates 134 @ 2c Housings and Castings not otherwise specified2\( \) C Guide Plates
Mrs. Potts' Parent	Spindles and coupling boxes
** 2	Pipe Mill Castings
Shevels and Spaces.   dis 50&5	Pulleys up to 30 inches
Hindostan Oil Stone No	heavy
Flat Head Iron	Common C'st, toto 10 g. 90   17 to 20 g
Plate 1 die 40 @ 4045 e	Heavy Hardware.  Bolts, Screus, Nuts, etc. Lewis, Oliver & Phillips, discount off Standard List. Carriage & Tire Bolts, ordinary orders 75. & 3 9 off net Stove Bolts
German Silver	Stove Bolts
prings.—Torrey	Bolt Ends

THEIR	ON	AG
Pat. Hot Pressed Sq. and Washers, all made from Nuts and Washers in 2 and Washers in lots le \$\frac{\pi}{2} fex. Nuts and Washers Harrow Teeth. Skein Bolts. Cast Iron Washers. Fire Shovels and Pokers	Hex. Nuts. new band iro 5 m boxes, 3 ss than one i shers in 5 m	
Single Trees, Neck Yol from best selected hich the most approved pat No. 1 Southern Plow Sil complete, Irons all Wr No. 2 Western Plow Sin complete, Irons all Wr No. 3 Wagon Single Tree Irons all Wrought, exc rule	kes and Doukery, and iro terns, agle Tree, Irought	chile Trees, manned complete, monedeach, 250 monedeach, 350 molete, e Fereach, 500 molete, plete,
Tourish the result of the resu	100 Set, 45&r. rew End, 9 a	comeach, 500 r
Chains, Straig	tht or Twi	st Link.
5-16. Net ca Arise Shoes, Juniata Horse Shoes, Juniata Horse Shoes.  Steel Tee Calks. Thistlewood & Co.'s Self-Thistlewood & Co.'s Self-Thistlewoo	lf-Sharpening	keg lots. per keg, \$3 per 71/20 g Horse per keg, \$5
Toe Calks	nd Red Les	per 1b.
Litharge. Dry White Lead	ow Glass.	
Size	Strength.	A. B. C
6 x 8 to 10 x 15 11 x 11 to 16 x 24 11 x 12 to 16 x 24 11 x 12 to 16 x 24 11 x 25 to 20 x 30 11 x 25 to 20 x 30 11 x 25 to 20 x 30 11 x 25 to 20 x 25 12 x 35 to 24 x 25 26 x 35 to 24 x 26 30 x 52 to 30 x 54 30 x 52 to 30 x 54 30 x 55 to 34 x 56 34 x 35 to 34 x 60 36 x 80 to 20 x 50 11 x 12 x 12 11 x 12 to 10 x 15 12 x 25 to 20 x 30 15 x 36 to 24 x 30 26 x 36 to 30 x 50 30 x 55 to 30 x 50 30 x 50 to 30 x 50 30	12,00 13,75 13,00 14,50 15,00 17,25 17,25 19,75 21,00 23,25 24,00 25,75 27,75 29,25 23,25 24,25 24,00 23,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 24,25 25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,25 26,	86.75 86.25 8.77.75 7.25 6.75 7.25 6.75 7.25 6.75 7.25 6.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75 10.75
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Loose Succes. Shab Zinc or Speiter.  Uspper.—Bottoms. Sheathing. Planished. Botler lengtls Botler lengtls Braziers* Sheets. 38:00, 6 to 7 lbs \$7 38:00, 6 to 7 lbs \$7 38:00, 6 to 9 lbs \$8 30 der.—F. S. & Co. 9 lbs. \$1 10 kooding. Braziers or Speiter Sol Antimony. Robbt Metal—F. S. &	34c   50x60, 10 32c   30x60, 15 ake	to 12 ibs # n s to 100 ibs. 4
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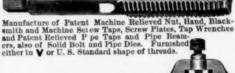
No. 4, Jawe es in. x 13, in., 20 00 open 75 in. 20 00 No. 5, Jawe 7 in. x 13, in., Screws 13, in. diameter, Lever 24 in. long 27 00 No. 6, Jaws 8 in. x 11/2 in., Screws 11/2 in. diameter, Lever 26 in. long 

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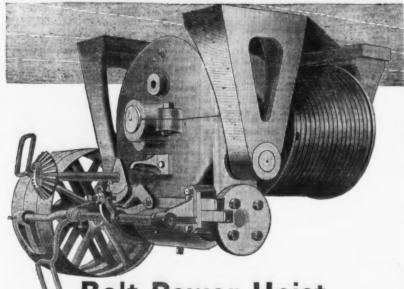
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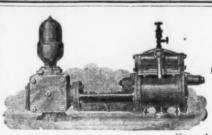
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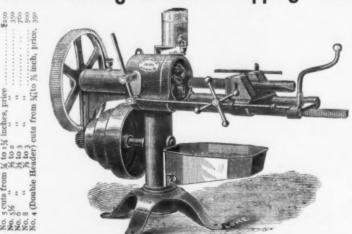
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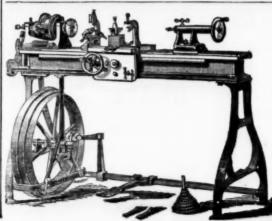
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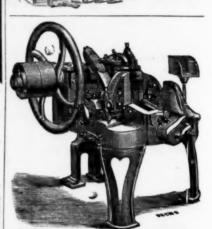


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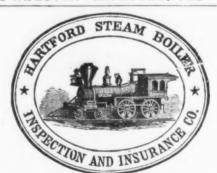
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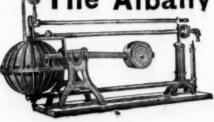
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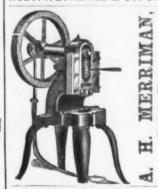
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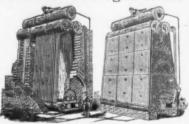
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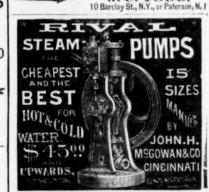
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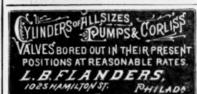
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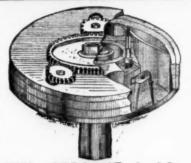
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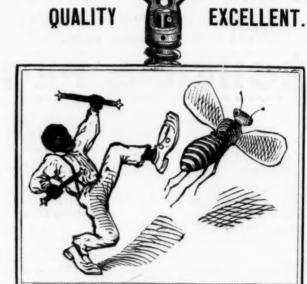
#### TRIAL OF THE IMPROVED LIGHTNING SAW.

The Emperor Dom Pedro, accompanied by Director General Goshorn, Superintendent Albert, and others, visited Machinery Hall, at the Centennial on the evening of June 28th. Among other things inspected, at the invitation of E. M. BOYNTON, of New York, they witnessed a trial of the New Lightning Saw, patented March 26, 1876. Two men, with one of these saws, cut off a sound log of gum-wood, one foot extreme diameter, in seven seconds, or at the rate of a cord of wood in five minutes. Messrs. Corliss, Morell, Lynch, and other members of the commission, witnessed the triale and timed the cutting. The Emperor remarked, That was fast, very fast cutting. Last evening the Emperor made another examination of the saw.—Philadelphia Press, June 30.

"Boynton's Saws were effectually tested before the judges at the Philadelphia Fair, July 6th and 7th. An ash log, eleven inches in diameter, was sawed off, with a four-and-a-half-foot lightning cross-cut, by two men, in precisely six seconds as timed by the chairman of the Centennial Judges of Class Fifteen. The speed is unprecedented, and would cut a cord of wood in four minutes. The representatives of Russia, Austria, France, Italy, Spain, Belgium, Sweden, England, and several other countries, were present, and expressed their high appreciation."

Received Medal and Highest Award of Centennial World's Fair, 1876.
\$1000 Challenge was prominently displayed for six months, and the numerous saw manufacturers of the world dared not accept it, or test in a competition so hopeless.

# SHOO-FL Screen Door Springs,



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